

1-1-2010

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**AN INQUIRY INTO SITUATIONAL INTEREST IN A TENTH GRADE
HISTORY CLASS: LESSON DESIGN AND IMPLEMENTATION FROM
BERLYNE AND BERGIN PERSPECTIVES**

by

CHRISTINE L. MORGAN

DISSERTATION

Submitted to the Graduate School

Of Wayne State University,

Detroit, Michigan

in partial fulfillment of the requirements

for the degree of

DOCTOR OF EDUCATION

2010

MAJOR: CURRICULUM AND INSTRUCTION

Approved by:

Advisor Date

Advisor

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DEDICATION

To Kathy, who held up my world beyond the pages of this dissertation. Thank you for your love and your years of understanding—especially for the days when this dissertation didn't *catch* and *hold* your situational interest.

ACKNOWLEDGEMENTS

I would first like to thank God for carrying me through the years that it has taken to write this dissertation. You nudge my pedagogical spirit with miracles in my classroom, and you cradled my anxiety in writing this with better moments in my growth in scholarship.

I would like to thank Amy Bosma. Without you and your generous offer to conduct this study in your classroom, this research could not have happened. Your part of this story speaks volumes in two teachers' quest to build lessons to engage student situational interest.

I would like to thank the students who participated in the study group. Your words helped tell a story that needs to be told in classrooms.

I would like to thank Kathy Godin, who listened and typed hours of audio tapes. Over the years, you have participated in every step of the evolution of this dissertation.

I would especially like to thank Dr. Jazlin Ebenezer. From the beginning, you have been my guardian angel in my struggle to become a scholar. You pushed and shoved my scholarly weakness; yet, you always tried to guide my literary hand down the path of good scholarship. Despite the run-on sentences and the number of rewrites that you have taken the time to read, you exercised patience. For all of this and never giving up on me, thank you. Even more, thank you for this constructivist exercise in coming to understand the value of qualitative research. You have been an exceptional mentor in scholarship, and I was blessed to work under your mentorship.

I would also like to thank Dr. Leonard Kaplan. Throughout this journey, you have always let me walk to the "beat of my own drummer." More importantly, you have

been a relentless champion of teachers using affect in the classroom. Your passion for this cause inspired this research.

I would like to thank Dr. Michael Addonizio for your patience, your precise scholarship, and your challenging questions to me in this journey. You are a model of excellent scholarship.

I would like to thank Paul Johnson for your compassion and your help.

Finally, I would like to thank my mother, my siblings, my friends, and Rita for the years of support you have provided to me in this painstaking effort.

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CHAPTER ONE

INTRODUCTION

1.1 Background

Advertisements use attractive graphics, images in intense colors, rhymes and phrases, active verbs, or chiming jingles to “catch” and “hold” the interest of the audience. For example, when someone is asked to complete the jingle, “What do you want, when you gotta have something, and it’s gotta be good...?” within moments and accompanied by smiles, numbers of people regardless of generation will be chiming in to complete the jingle. Millions of people around the globe not only commit these words to their long-term memory but also willingly summon these jingles up with pride when asked to recall them. Jingles create interest in a product and it has worked. Advertising has established the importance of immediately engaging the consumer and holding interest in a product (Celsi & Olson, 1988; Janiszewski, 1993). Companies who catch and hold interest are seldom out of business.

To engage interest in speechmaking, Kirby (2003) writes *117 Ideas for Better Business Presentations*. The chapter on *The First Rule of Speechmaking* offers suggestions for the introduction of a speech: (1) Keep your audience awake; (2) make “being interesting” a personal goal; (3) create positive anticipation; (4) be interesting right away; (5) ask a rhetorical question; (6) tell an intriguing story or state an unusual fact; (7) appeal to people’s fascinations; (8) use vocal variety; (9) inject some real life; and (10) drop names. By quoting “If you haven’t struck oil in three minutes, stop boring!” (Kirby, 2003, on-line). Kirby drives home the critical importance of the introduction to a speech for capturing the interest of the audience.

In writing, Troyka (1999) suggests “The introductory paragraph sets the stage and prepares the readers for what lies ahead. Introductions provide a bridge for readers to begin

entering your mind, to arouse interest of your readers in your subject” (pps. 95-96). For engaging the reader, the writer provides relevant background information or gives a pertinent statistic or statistics or relates a brief, interesting story or anecdote. Writers also thread the key idea(s) throughout the paper to hold the reader’s interest.

In her *Direct Instruction Model*, Hunter (1998) notes that the introduction of every lesson should consist of an “anticipatory set” (in McClanaghan, 2001, p. 29). An anticipatory set is a short activity or a “hook” at the beginning of a lesson that focuses attention on what is about to be learned. Hunter neither designs a model of an anticipatory set nor provides extensive research evidence to guide teachers in capturing learner interest. However, Hunter’s “hook” is a benchmark for teaching. For instance, *Engage All Learners – Anticipatory Set*, a chapter in *Motivating Today’s Learner*, suggests “Begin lessons with something that grabs students’ attention and engages them right away in the lesson so they are involved right from the start” (McClanaghan, 2001, p. 29). According to the author, an effective anticipatory set relates to the learning objective, stimulates interest, and establishes relevance to students’ lives. A successful anticipatory involving a provocative question, a visual aid, a demonstration, a reading, a movement or a guest speaker is expected to grab students’ attention at the beginning of the lesson and increase the chances of students remaining attentive as the instruction proceeds.

While each of the above instances (advertising, speechmaking, writing, and learning) denotes that interest as an important property for its success, this study focuses on the development of the relation between interest and learning. Studying the relationship between interest and learning can be traced back to the 19th century to the German philosopher, Herbart. Shiefele (1990), a leading interest researcher, summarizes Herbart’s position in the following way: “In his (Herbart) opinion, it is first and foremost interest that allows for correct and

complete recognition of an object, leads to meaningful learning, promotes long term storage of knowledge, and provides motivation for further knowledge” (p. 549). Herbert is not alone in his opinion of the value of interest in learning. Prior to the turn of the 20th century, James (1890) notes that interest is accompanied by selective persistence in a subject: “Millions of items of the outward order are present to my senses which never properly enter my experience. Why? Because they have no interest for me. My experience is what I agree to attend to. Only those items which I notice shape my mind. Without selective interest experience is utter chaos” (p. 402). Dewey (1973) states, “In behalf of interest, it is claimed that it is the sole guarantee of attention; if we can secure interest in a given set of facts or ideas, we may be perfectly sure that the pupil will direct his energies toward mastering them; if we can secure interest in a certain moral train or line of conduct, we are equally safe in assuming that the child’s activities are responding in that direction; if we have not secured interest, we have no safeguard as to what will be done in any given case” (p.1). He adds, “Genuine interest...means that a person has identified himself with, or has found himself in, a certain course of action” (p. 43). Tyler (1981) insists that all approaches to curriculum should not only provide a meaningful educational experience but also should stimulate children’s attention and interest. Without question, the role that interest plays in learning cannot be overlooked by educators. To study the implications of the role that interest plays in learning, it must be conceptualized.

1.2 Conceptualizations of interest and Research Foci

The research on the relationship between interest and learning embraces three conceptions of interest (Ainley, Hidi & Berndorff, 2002): individual, situational, and topic. *Individual interest* is viewed as a mental state or a disposition of a person that has both a cognitive and an affective quality (Hidi & Harackiewicz, 2000). *Individual interest* is specific to

the individual. It is a disposition that develops over time and is usually associated with increased knowledge, positive emotions, and increased referenced value. It is the interest that a student brings to the environment or context (Ainley, Hidi & Berndorff, 2002; Hidi, 1992; Hidi, 2000; Hidi & Harackiewicz, 2000). For instance, when a student comes into a classroom, he or she enters the room with particular individual interests.

Situational interest is considered a psychological state/phenomenon that may be described as an interactive relation between an individual and certain aspects of his or her environment; thus, it is content and context specific (Hidi, 2000; Hidi & Harackiewicz, 2000; Krapp, Hidi, & Renninger, 1992). This means interest occurs only when a stimulus and a person interact, so one can never stipulate one to the exclusion of the other (Hidi & Bard, 1986). *Situational interest*, as opposed to individual interest, can be generated across individuals by certain conditions and/or stimuli in the environment. It results from an interaction between the person and the environment (Ainley, Hidi & Berndorff, 2002; Hidi & Anderson, 1992; Hidi, 1992, 2000; Hidi & Harackiewicz, 2000). Thus, it may be viewed that individual interests are the individual differences in interest that will exert influence on the classroom environment, and situational interest is how the environment is arranged to exert influence over individual interests (Mitchell, 1993).

Topic interest is the level of interest that is triggered when a specific topic is introduced. Researchers have argued that topic interest is an ambiguous genre of interest research and that it is germane to both individual interest (Schiefele, 1996) and situational interest (Hidi, 2000). Ainley, Hidi and Berndorff (2002) reiterate that topic interest includes aspects of both individual interest and situational interest and each of these forms of interest contributes to topic interest.

For over a decade, researchers have argued that individual interest and situational interest are not dichotomous isolated events. Rather, they have stated that both of these types of interest interact and influence each other's development (Ainley, Hidi & Berndorff, 2002; Hidi & Anderson, 1992; Hidi, 1992; Hidi, 2000; Hidi & Harackiewicz, 2000). Studies have also demonstrated how environmental factors that were used to elicit situational interest had triggered or contributed to a long-lasting individual interest (Alexander, 1997; Bergin, 1999).

Deci (1992) offers an expanded conception of interest, actually merging the specific conditions of the individual and the situational factors. He states that interest occurs at the moment of a match between orgasmic conditions and the affordances of the situation. In other words, "One experiences interest when one encounters novel, challenging, or aesthetically pleasing activities or objects in a context that allows satisfaction of the basic psychological needs and thus promotes development" (1992, p. 49). Deci maintains that interest is characterized by personal subjectivity, and the subjectivity of interest in a learning activity is developed and strengthened by preference, personal meaning, and the perceived value of the activity.

The above conceptualizations form the specific domains of interest research. How interest research is categorized and classified must be also examined to anchor the research at hand. Since the 1980's, interest research may be best understood by viewing the research from two perspectives. First, interest research has been categorized according to how the concepts of interest are related and studies have approached interest research from three points of view: (1) interest as a disposition or a characteristic of a person; (2) interest as a characteristic of a learning environment or interestingness; and (3) interest as a psychological state within a person, which includes actualized individual interest or situational interest (Krapp et al., 1992). Even though all

of the studies in interest research may fall under one or a combination of these approaches, they are understood more clearly based on how they are classified according to variables.

The second perspective thus uses the independent and dependent variables involved in the interest-learning related investigations to classify interest research into five fields: (1) the relation between individual interest and academic achievement (Schiefele, Krapp, & Winteler, 1992), (2) the relation between individual interest and the structure of acquired knowledge (Hidi, 1990; Hidi & Anderson, 1992; Schiefele, 1992), (3) the relation between situational interest and academic achievement (Tobias, 1990), (4) the influence of situational interest in text-based learning (Hidi, 1990, Hidi & Bard, 1988; Schiefele, 1988), and (5) the explanation of the interest effect (Csikszentmihayli, 1988; Elliott & Dweck, 1988; Schiefele, 1989; Shirey, 1992). These fields provide a succinct overview whereby the body of literature in interest research may best be comprehended.

It must also be pointed out that aside from the research done in regards to interest and learning, a few studies have addressed interest and development (Krapp et al, 1992). Studies on individual interest as a developmental condition and outcome have mainly focused on how students gain and change interests in content areas (Hidi & Anderson, 1992; Krapp & Fink, 1992; Renninger, 1992).

Despite the various accomplishments in the interest research, Hidi and Harackiewicz (2000) point out that there is little research aimed at promoting *situational interest* through educational interventions. In particular, Hidi (1990) and Hidi and Harackiewicz (2000) argue that educational practices that would elicit *situational interest* could play an important role in motivating the academically unmotivated children and possibly stimulate and challenge learning in the classroom.

1.3 Problem Statement

As a child gets older, his thirst for knowledge and his unending urgency to explore is abated. By the time he reaches high school, most behaviors that contribute to learning become almost nonexistent. The following scenario depicts how the adolescent may have manifested interest in learning as a child.

In the distance, there is a small boy scrunched over in a garden of wild flowers. The afternoon sun casts strands of shadows from the poppies, the columbine, and the daisies across his body. Like confetti, the long strands of shadows weave around his small frame as he gently bends down with cupped hands. He waits patiently for what seems to be a lifetime. Then, nervously, he carefully clasps his little hands around a brilliant Monarch butterfly. Holding it captive with one hand, he reaches down and selects out the tiniest of pebbles from a rugged pile of stones. He carefully attempts to balance it between its wings. Waiting to observe the results of his theory, he sets the butterfly free. After a short instinctive struggle, the butterfly is once again in flight and the tiny pebble is quickly returned to the earth. Floating in the whispers of the wind is a gentle muttering—"Can't carry it." Satisfied with this conclusion, the young child is also off, but only to find another source of interest.

As learners progress throughout their K-12 experience, their interests in school wanes (Eccles, Wigfield & Schiefele, 1998). Why is this so? Instruction becomes increasingly routine and repetitive (Goodlad, 1984; Shernoff, Schneider, & Csikszentmihalyi, 1999). Hence, students are not engaged, and their disengagement serves to bring into focus the significance of the problem of boredom in schools (Gallagher, Harradine, & Coleman, 1997; Larson & Richards, 1991; Shernoff, 2003). For example, Larson and Richards's (1991) research findings on boredom are as follows: First, the rate of boredom is highest in classes that are academic and abstract in

nature, such as social studies, science, foreign language, and English. In contrast, the rate of boredom is lowest in industrial arts, music, art, and gym. Second, boredom is related to the type of class activity--higher rates of boredom are experienced in passive activities and the lowest rates of boredom are experienced in social or interactive activities. Third, high-ability and high-achieving students report more boredom during schoolwork; yet, they did not report being bored outside of school. The authors suggest that the aforementioned findings may be related to a "...lack of stimulation and challenge in their classes" (p. 438). The first two findings might contribute why teachers are not able to create learning environments that promote situational interest in the subject matter (Hidi & Harackiewicz, 2000).

In their implications for policy change based on their research findings, Larson and Richards (1991) suggest reducing the number of teaching activities that contribute to and sustain boredom; making academic classes that are abstract in nature, less effortful; and having teachers use similar techniques to those that are utilized in shop, music, and art classes. Students learn better when content is interesting (Chen, 1996; Krapp, Hidi & Renninger, 1992). Creating learning sequences that stimulate situational interest is a way for schools to reduce boredom.

Whether it is boredom or the most recent research on student disaffection, researchers suggest that research is needed on instructional design that fosters and facilitates an increase in situational interest (Burke, 1995; Hidi & Harackiewicz, 2000; Research report, http://www.regard.ac.uk/research_findings/R000223809/report.pdf). Hidi (1990) and Hidi and Harackiewicz (2000) argue that educational design and practice that would elicit situational interest could play an important role in the motivation of academically unmotivated children and could possibly elicit stimulation and challenge in the classroom. Students learn better when they are interested, engaged, and motivated (Hidi & Harackiewicz, 2000; Wade, 2001). These

affective behaviors cannot be ignored in research. This research is to revive a “thirst for knowledge” in students in a secondary education setting. Further, there is little research that investigates the relationship between how a learning sequence is designed and the variables in a lesson that have the ability to elicit situational interest in subject matter (Hidi & Harackiewicz, 2000). No classroom-based study has yet shown that exploring instructional design of a learning sequence with specific variables will increase situational interest in the lesson.

1.4 Research Objective and Questions

Using “four seasons” as a metaphor, this study demonstrates how situational interest grows in Mary’s 10th grade social studies classroom. In collaboration with the researcher of this study, Mary designs and implements a lesson sequence on *Politics and Life in the Roaring Twenties*. The purpose of this study is to document, analyze, interpret how a teacher (Mary) and her students in a sophomore history class perceive how they experience situational interest when the teacher incorporates Berlyne’s (1960, 1963, 1965) collative variables to foster perturbation or disturbance—*surprise, complexity, ambiguity, novelty, change, and indistinctness* and Bergin’s (1999) situational factors in the design and implementation of a lesson sequence. Based on this purpose, several questions are framed to depict the four seasons of the findings as a metaphor.

1. Winter: The bare beginnings—what are Mary’s pedagogical dispositions and inclinations of how a learning sequence on *Politics and Life in the Roaring Twenties* should be designed and implemented with a focus on situational interest? This question metaphorically illustrates the bare beginnings of the winter—how a teacher’s pedagogical disposition and inclinations are open to designing lessons with Berlyne’s collative variables and Bergin’s situational factors.

2. How did the teacher's perceptions of situational interest grow as a result of the specially designed lesson sequence that incorporated Berlyne's collative variables and Bergin's situational factors? This question is metaphorically anchored in the spring. In this chapter, Mary's pedagogical ground begins to warm; the perceptions of Mary, the researcher, and the students illustrate how situational interest slowly grew in the learning context with Berlyne's collative variables and Bergin's situational factors.
3. What light did the students shed on how situational interest should be conceptualized in the implementation of the specially designed lesson sequence? This question metaphorically depicts summer: Mary's pedagogical ground is filled with warmth that nurtures a growth in an understanding from perceptions that are yielded by the students from a collective lens.
4. Does a learning sequence designed with Berlyne's collative variables and Bergin's situational factors significantly increase 10th grade students situational interest in the content of the lesson?
 - How do the students conceptualize situational interest?
 - Is there a significant difference in the students' test scores when they are taught using Berlyne's collative variables and the situational factors to design the learning sequence as compared/contrasted to a different practice of teaching?
5. How did the investigation of situational interest change Mary's perceptions of how to design lessons to engage situational interest? This question metaphorically depicts fall: Mary's pedagogical ground is brisk with an understanding of how situational interest ripens in the lessons. Mary undergoes a pedagogical transformation.

1.5 Theoretical Framework

Situational interest can be generated across individuals by certain conditions and/or stimuli in the environment; it is an affective response that may or may not last (Hidi, 1990; Hidi & Anderson, 1992; Krapp, et al, 1992; Murphy & Alexander, 2000; Hidi, 2000). It is conceptualized as having two potential stages: one in which interest is triggered (Hidi & Baird, 1986) and one in which interest is further maintained (Mitchell, 1993). It is conceptually viewed as a person's subjective perception of an activity's stimulating characteristics (Hidi & Anderson, 1992). It derives from perceptions of an activity and such perceptions are correlated with the following properties: curiosity, stimulus selection, investigative intention, and desire to explore. All of these properties are rooted in the perception of value and meaning that are embedded in the activity (Chen, 1996; Chen & Darst, 2001; Reeves, 1989). But why are these properties and this psychological state of value to an educator?

Situational interest motivates learning (Chen & Darst, 2001; Hidi & Harackiewicz, 2000; Renninger et al, 1992). Research literature in interest has examined the role of interest in the learning process. This research has characterized situational interest as a psychological state that is heightened by attention, concentration, and affect (Ainley, Hidi, & Berndorf, 2002; Krapp, Hidi, & Renninger, 1992; Pekrun, 2000). Because affect is a factor of situational interest, it must be also noted that it is directly proportional to cognition (Kaplan, 1986).

Prenzel's (1992) work characterizes situational interest with selectivity and persistence. Persistence in task contributes to mastery, and selectivity encourages the decision to engage. Alexander, Jetton, and Kulikowich (1995) support such a claim by positing that a heightened state of situational interest is critical to motivate the learner to elicit cognitive effort and energy (1995). Finally, if situational interest is sustained, the psychological state of undivided interest or

“flow” that characterizes creativity may occur (Csikszentmihalyi, 1990; 1996). If teachers are able to create environments that elicit interest that foster cognitive effort and energy, it will augment the probability of students successfully mastering the material to be learned. This is when an affective-cognitive synthesis takes place (Rathnude & Csikszentmihalyi, 1993).

This research is most strongly supported by the cognitive and affective claims that have been discerned through interest research. One such value claim is that interest plays a role in what one chooses to learn and how well students learn information (Garner, 1992; Schraw & Lehman, 2001). Further, interest impacts the use of specific learning strategies and how attention is allocated (Hidi, 1990; Schraw & Lehman, 2001; Wade, 2001). Moreover, interest manifests itself in deeper processing and emotional engagement in a task (Schraw & Lehman, 2001; Schraw, 1998; Schiefele, 1996, 1999; Wade, 2001).

1.6 Overview of the Methodology

This situational interest study adopts a mixed methodology for it is the most valuable in affective research (Turner, 2001). A reason is that inductive and deductive methods are complementary for the “... strengths of one offset the weaknesses of the other” and “...one method informs the other” (p. 100). Only qualitative data has the ability to answer “how” the affective response is constructed in the setting; whereas, the quantitative method offers the opportunity to use a theoretical orientation to answer the “what” “and why” about the affective variable—thus, allowing for generalization. To answer the research questions about “what” and “how and why” based on affective responses, a mixed-method approach has the ability to present valuable information that allows for meaningful conversation with each other (Tashakkori & Teddie (1998).

The study is primarily qualitative, guided by “grounded theory” and “constant comparison method with theoretical sampling” (Glaser, 1978; Glaser & Strauss, 1967) because it is consistent with the assumption of how social reality is “known” (Suddaby, 2006). The qualitative component is conducted in a 10th grade history class in a rural, class “B”, school district in Michigan’s thumb. The perceptions of a social studies teacher and her students are observed over a six week period. Qualitative data sources are transcripts of teacher and student interviews, video tapes of the learning sequences, out-the-door surveys, consensograms, and researcher journal entries.

The quantitative part of this mixed study was an examination of the data from the students test scores before and over the six week study.

1.7 Overview of the Study

Chapter one is devoted to identifying the problem and laying out a justification as to why such a study is needed. It is also a window to the layout of the dissertation.

Chapter two explores the extant literature in interest research, with a focus specifically on situational interest as a theoretical construct.

Chapter three details the mixed methodology of this study. It describes the context of the study, how data was collected, and how data were collected and analyzed using both qualitative and quantitative methods. It also discusses the curriculum and the qualitative strategies that were used to address credibility, dependability, and confirmability.

Chapter four narrates and interprets the bare beginnings of the teacher using the winter metaphor. This chapter reveals Mary’s perception of how situational interest should be designed and facilitated in a learning sequence. It also shows how the degree of the higher level thinking involved in the perturbation or disturbance relied on Mary’s inclinations of how *surprise*,

complexity, ambiguity, novelty, change, and indistinctness Bergin's situational factors should be interpreted in lesson design.

Chapter five reveals the findings as to how situational interest grew in each lesson in a learning sequence. It is metaphorically represented as the season of spring.

Chapter Six characterizes the landscape of the six week study after it has finished blooming. This chapter uncovers what light the students shed on how situational interest should be conceptualized. The metaphor of summer is used to discuss the findings.

Chapter seven unfolds how the investigation of situational interest changed Mary with the metaphor of fall—it is a season of changing colors in Mary's pedagogical practice.

Chapter eight concludes the dissertation with a summary, discussions of issues arising from the study, implications for curriculum, teacher education and policy, and recommendations for future research.

1.8 Significance of the Study

First, the study responds to the call for more research regarding instructional practice that fosters and facilitates an increase in situational interest in the lesson's content.

Second, if research is able to claim that a specific learning task design engages interest, it would empower educators with an understanding of the collative variables and situational factors that foster situational interest in lesson design.

Third, if it is demonstrated that there is a relationship between how a learning sequence is designed and whether or not students perceive situational interest in the content, it will provide a facet of situational interest theory that will empower teachers with a theoretical lens to develop instructional learning sequences.

Fourth, most situational interest studies are quantitative. This study uses a mixed approach to provide a more meaningful view of the features of situational interest.

Fifth, this study uses grounded theory to anchor situational interest on qualitative data.

Sixth, because of the application of the grounded theory to generate the perceptions of situational interest, this study might provide more concrete results than the five dimensions proffered by Chen, Darst, and Pangrazi (1999) in the Situational Interest Scale: exploration intention, instant enjoyment, attention demand, novelty, and challenge.

Seventh, because these dimensions are abstract in nature and provide little specific feedback as to the how to generate situational interest in the classroom, this study seeks to understand the concrete variables and situational factors that foster situational interest. This would allow educators to manipulate such variables and situational factors in their own lesson design.

Eighth, the study attempts to use the findings that are grounded in the data to build theory in lesson design and situational interest. A grounded theory would provide a theoretical framework for creating lessons that foster situational interest

Ninth, if teachers are provided with a concise understanding of the features in lesson design that contribute to the construct of situational interest, it will provide them with a better understanding of how learning environments and lessons can be designed to stimulate situational interest.

Tenth, knowledge in situational interest will also contribute to teaching methodology that may trigger student motivation (Hidi & Harackiewicz, 2000).

Eleventh, for cognitive and affective ends, this research contributes to educational policy. This study suggests that designing lessons to elicit situational interest contributes an important piece in affect literature that links affect to greater cognition (Kaplan, 1986).

1.9 Descriptions of Terms

- Ambiguity and indistinctness is a gap of available information (Berlyne, 1960, 1963, 1965).
- Catch is features in a learning environment that catches/triggers interest (Hidi, 2000).
- Collative variables are formal properties of stimuli (Berlyne, 1960, 1963, 1965).
- Complexity and novelty are collative variables that create a gap between information that is known and unknown or an information deficiency that has a function to elicit exploratory behavior. In a complex pattern or sequence of novel stimuli there is an uncertainty about what will be perceived next; with novelty and complexity, there is uncertainty about how a pattern should be categorized or what labeling responses should be attached or what overt response is appropriate; (Berlyne, 1960, 1963,1965).
- Extrinsically motivated behavior occurs when activities that are not themselves interesting are done because they are instruments for some desired outcome (Deci, 1992).
- Hold is a condition that sustains interest over a period of time (Mitchell, 1993).
- Individual interest is interest that is specific to the individual. An individual disposition that develops over time and is usually associated with increased knowledge, positive emotions, and increased reference value (Hidi, 1992).
- Interest is a psychological state that emerges from a person's interaction with the environment (Krapp, Hidi & Renninger, 1992).
- Intrinsic motivation is a behavior of engagement that occurs in the absence of any operationally separable reinforcement (Deci, 1992).

- Motivation is those forces that account for selection, persistence, intensity and cultivation of behavior (Snowman & Biehler, 2000).
- Optimal challenge/novelty are activities or ideas that are optimally discrepant from what students can do or what they know (Deci, 1992).
- Perturbation is conceptual conflict represented by one of the collative variables.
- Stimulant is a variable that temporarily increases the activity of a person (Snowman & Biehler, 2000).
- Situational Interest—interest that can be generated across individuals by certain conditions, and/or stimuli in the environment. It results from an interaction between the person and the environment (Hidi, 1992).

Definitions of Berlyne's Collative Variables

- Ambiguity and indistinctness occurs when there is a gap in available information (Berlyne, 1960, 1963, 1965).
- Novelty and complexity occurs when there is there is uncertainty about how a pattern should be categorized or what labeling responses should be attached or what overt response is appropriate for it (Berlyne, 1960, 1963, 1965).
- Surprisingness and incongruity occurs when there is a discrepancy between information embedded in the learner's expectation and the information embedded in what the learner perceives (Berlyne, 1960, 1963, 1965).
- Epistemic curiosity leaves the learner with some uncertainty that can only be reinforced by information that is capable of reducing that uncertainty. It results in an exploratory response that drives the learner to access information to relieve the curiosity (Berlyne, 1963, 1965).

Definitions of the dimensional keys used in the Situational Interest Scale (Chen, Darst, & Pangrazi, 1999):

- Attention demand and a sense of delight are interactive experience that a person obtains when he/she is engaged in an activity (Chen, Darst, & Pangrazi, 1999; Chen & Darst, 2001; Mitchell, 1993).
- Challenge is an activity feature that represents level of difficulty relative to a person's ability; it has the unique ability to attract a person to engage in an activity (Chen, Darst, & Pangrazi, 1999; Chen & Darst, 2001; Harter, 1978).
- Exploration intention, desire arousal, and time alteration are mental dispositions dimensions that occur in a person when an activity interests him/her. They are the effects of stimulation in an activity (Chen, Darst, & Pangrazi, 1999; Chen & Darst, 2001; Mitchell, 1993).
- Novelty is an activity feature that is an information deficiency (Chen, Darst, & Pangrazi, 1999; Chen & Darst, 2001).

CHAPTER TWO

SITUATIONAL INTEREST

2.1 Introduction

The last few decades have provided a significant body of research that has demonstrated as students get older their motivation, attitudes, and interests in school declines (Eccles & Midgley, 1990; Hidi, 2000; Sansone & Morgan, 1992; Wigfield & Eccles, 1992)—students are bored (Healy, 1984; Larson and Richards, 1991). Such disaffected psychological states detract students from attention (Smith 1981; Thackray 1981) and provides obstacles to student achievement (Farmer & Sundberg, 1986; Larson 1990).

Teachers need to intervene into the routine and repetitive nature of learning tasks. They need to purposefully design and use “interest-enhancing strategies” to make boring tasks more engaging (Sansone, Wiebe, & Morgan, 1999). To answer this reality, more researchers are calling for investigations in establishing the link between learning task design and its motivational function (Mitchell, 1993; Burke, 1995). Hidi and Harackiewicz (2000) state that there is a “relative paucity of research aimed at promoting situational interest with educational interventions. More research is needed to develop effective interventions and identify the motivational processes through which such interventions might work” (2000, p.11). Because of the amount of time and effort required by teachers in addressing individual interests, the study of interventions to incite situational interest is viewed as a necessary missing link in educational research (Burke, 1995; Chen, 1996; Hidi & Harackawicz; 2000). Hence, investigating whether or not an integrating subject matter with activities that uses Berlyne’s collative variables (1960, 1963, 1965) and situational factors established in Bergin’s work (1999) will increase situational interest is a valuable curricular piece in research. To understand the importance of studying

educational interventions that promote situational interest, it is important to understand how situational interest affects motivational and cognitive functioning.

The fundamental assumption in this study is that situational interest increases learning in social studies. Hence, in Chapter 2, using four frames, this research critically analyzes and discusses the concept of *situational interest* and how it may be used to enhance learning:

A. Frame 1: Theories Underpinning Interest

1. Person-Object Theory
2. Self Determination Theory for Motivation
3. Equilibration Theory

B. Frame 2: Interest and Relations

1. Affect
2. Curiosity
3. Attention

Frame 3: Variations in Situational Interest

1. Berlyne--Collative Variables for Conceptual Conflict and Resolution
2. Schank—Interestingness in Discourse Processing
3. Kintosh—Emotional Interest vs Cognitive Interest
4. Iran-Nejad—Stories and Resolution
5. Hidi and Colleagues—Reading and Writing

C. Studies on Personal and Situational Interest

D. Summary and Significance to Study

The chapter begins by discussing theories--the person-object theory, self determination theory for motivation and equilibration theory--underpinning the concept of interest. The person-

object theory (Deci, 1992) posits that the development of the individual is contingent on an individual experiencing his/her environment. Self determination theory states that innate psychological needs are the basis for self-motivation and personality integration. Equilibration theory (Piaget, 1973) refers to the biological drive to produce an optimal state of equilibrium between an individual's cognitive structure and the environment.

The study reveals how interest is connected to affect, curiosity, and attention. It is argued that affective variables are important for learning and that there is a connection between cognition and affection. Interest is in need of both. Through a literature review and a situational interest instrument used to guide the student interview questions for my study, the difficulty in separating the concepts of curiosity and interest is expressed. Within the frame of conceptual and empirical studies, this study teases out the conceptual similarities and differences. It also points out the issues in empirical research. In every section, important assumptions and applications of previous research to my study are highlighted. Finally, Chapter 2 is summarized and extrapolated theory and research is discussed.

2.2 Theories Underpinning Interest

Suddaby argues that it is appropriate for grounded theory method of building theory to examine the extant literature (2006). To address a deeper understanding of situational interest in research the theories underpinning interest must be examined. Three theories are significant to the study of situational interest in this research: the Person-Object Theory (Krapp, 1983); the Self Determination Theory of Motivation (Ryan, Kuhl, & Deci, 1997); and Piaget's Theory of Equilibrium (Piaget, 1985). In the following sections, each theory is explored and the significance to this study is discussed.

2.2.1 Person-Object Theory

Interest is defined in terms of a construct that characterizes a person's relationship with an object, which may be viewed as a topic, content, special subject, object domain, and event. Schiefele, Krapp, Prenzel, Heiland, and Kasten (1983) outline the basic assumptions of the person-object theory of interest. Two assumptions serve as general postulates or frame of reference for the person-object theory. First, an individual is in constant interaction with his environment; and second, a human being has reflexive competence in action or "the ability to control rationally and intentionally what we do" (Schiefele et al., 1983, as cited in Krapp, 1993, p. 9). Thus, the basic principles of a person-object conception of interest begin with the assumption that human life is a constant process of interaction between an individual and the environment. The interaction with the object is the basis for individual, social, and societal development. The environment is conceived to be composed of more or less familiar structure of objects, facts, and events that have significance for an individual's wanting or doing. In order to be able to recognize and understand one's environment –as well as one's identity—a person needs a certain knowledge that is acquired more or less systematically in the course of constant engagement with the possibilities and requirements of one's life. This knowledge is stored in the form of "cognitive representations" (Krapp, 1993, p. 9). It is then assumed that through these structured objects the individual experiences his environment. It is presumed that these objects are delimited from one another to compose the cognitively represented environment. According to how the individual attaches significance to these objects or units, they are registered cognitively and interpreted on the basis of prior knowledge. Two types of reality are associated with this object or unit. First from a constructivist point of view, the object or unit is experienced subjectively. The knowledge about the object and the perception of the object are in the mind of

the person. The other reality is the objective reality. This is the concrete, existing object or an abstract fact that can be communicated by messages or conversations. In this sense, the object would be viewed as “object-specific global knowledge” (Krapp, 1993, p.10).

The objects are of not equal significance to the individual. Some are experienced as valuable or relevant, whereas others have no significant attachment. A lasting value or attachment may occur with some objects (Krapp, 1993). “Object engagement” refers to an individual’s interaction with the respective objects (p. 10). If the engagement of the object occurs with purpose and intention, it is referred to as an “action of interest” (1993, p. 10). If the relationship with an object is relatively persisting and can be generalized across different situations or is habitual or is a dispositional personality feature, it is termed “person-object-relation” (p.10). This conceptualization allowed Krapp, Hidi and Renninger to arrive at the following definition of interest: “Interest refers to a person-object-relationship that is of outstanding significance and that can be distinguished from other person-object relationships that still need to be determined” (Krapp, 1993, p.10). From this conceptualization, interest has come to be described as an interactive relation between individual and certain aspects of his/her environment (e.g., objects, events, ideas) and is therefore content specific (Hidi & Harackiewicz, 2000; Krapp, Hidi, & Renninger, 1992). Most interest theorists have agreed that interest is a phenomenon that emerges from the reactions of individuals to their environments; where researchers disagree is where they assign the various levels of significance to the components of this representation (Hidi & Harackiewicz, 2000). Finally, although it is not necessarily dichotomous from individual interest, this conceptualization laid the groundwork for Bergin (1999) as well as Hidi and Baird (1988) to define situational interest as responses to environmental factors that promote interest in a particular context. Interest is generated by

certain conditions and/ or stimuli in the environment that focus attention, and it represents a more immediate affective reaction that may or may not last (Hidi & Anderson, 1992; Hidi and Harackiewicz; Murphy & Alexander, 2000). Most investigations on interest and situational interest have been predicated upon *person-object theory* (Krapp & Fink, 1992; Schiefele, 1992). Most interest researchers orient themselves with the “metatheoretical premises” stated in Krapp’s (1993) chapter, *The Construct of Interest*, in the *Studies of Educational Psychology*, where interest is defined from the perspective of the person-object theory. My study investigates situational interest from the “behavior-oriented level” approach (Krapp, 1993). This research focuses on the analysis of the actions of interest and the mental functions related to the engagement of the object of interest or “interestedness”.

2.2.2 Self Determination Theory for Motivation

Self determination theory also serves as a framework to understand the concept of interest. Self determination theory is “an approach to human motivation and personality that uses traditional empirical methods while employing an orgasmic metatheory that highlights the importance of humans’ evolved inner resources for personality development and behavioral self-regulation” (Ryan, Kuhl, & Deci, 1997 as cited in Ryan & Deci, 2000, p. 68). Self determination theory is predicated on the belief that innate psychological needs are the basis for self-motivation and personality integration. Autonomy, competence, and social relatedness are three salient needs in facilitating optimal functioning of the mental processes that are needed for growth and integration, social development, and personal well-being (Ryan & Deci, 2000). Autonomy refers to people wanting to determine their actions and goals themselves. Competence is people’s need to manage existing or future requirements and to cope with problems or tasks, and social relatedness is a person’s need to have satisfying social relations. There are three reasons why the

basic needs postulate is relevant to a theory of interest and to my study. First, it provides a plausible explanation for the motivational dynamics of interest oriented actions. Second, conclusions that may be drawn from this postulate help to explain how interests are changed and developed, and third, this postulate provides the only attempt to answer which conditions are responsible for the formation and stabilization of individual preferences that are intrinsically motivating (Krapp, 1993).

In studying human motivation with respect to situational interest, two views of motivation must be considered—intrinsic and extrinsic motivation. Intrinsically motivated behaviors are done simply for the personal reward of enjoying the activity itself. It is behavior that occurs in the absence of any operationally defined reinforcement, such as an extrinsic reward (Deci, 1992). Extrinsic behaviors, however, are done with the intention of procuring some form of reward or reinforcer, such as money, praise or grades (1992). Deci (1982) argues that people engage in activities for two reasons. One, people will participate because the activity is of interest to them (intrinsic), or two, people will participate in an activity for some other desired outcome that is not related to their interests (extrinsic).

The self-determination theory offers an explanation for the motivational dynamics that underlie the activities that people do from their own free will (intrinsic) and those that an individual is coerced or pressured to do (extrinsic) as both of these behaviors relate to the psychological needs of the individual. According to Deci (1982), to be self-determined means to engage in an activity with a full sense of wanting, choosing, and personal endorsement. In self-determination theory, interest is closely linked to intrinsic motivation, but is more specifically linked to self-determined action.

Autonomy, competence, and social relatedness—composites of self-determination—are the three psychological needs that motivate an individual to engage in a “nonreinforced” activity. Motivation is viewed through the process of *internalization*—internalization is the process through which external regulation is transitioned into internal regulation. This occurs when the value of an activity or the process of regulating it is “internalized” (Deci, 1992, p. 54). When this occurs, a person has transformed motivation by external factors into motivation by internal factors. Where interest in the activity would be viewed as the central motive in intrinsic motivation, “importance” of the activity would be viewed as the most determining motive in extrinsic motivation (Deci, 1992, p. 55). The self-determination theory posits that four types of extrinsically motivated behavior—external, introjected, identified, and integrated—occur in increasing degrees that allow for an individual to gradually become self-determined in an activity that does not interest him. This is better understood by the proposition that out of need for social relatedness and autonomy, an individual will value and behave in a manner that is endorsed by the social world because they need to be accepted by that world (Deci, 1992). From this point of view, students participation in an activity will be motivated out of interest in the learning task or for some other outcome that they perceive will result as a product of their participation.

How is situational interest viewed as it relates to intrinsic and extrinsic motivation? Hidi (2000) argues that because interest is “object specific” that it is not only the outcome of general, inner personal processes but it is “the product of a specific interaction between a person and an object” (p. 317). Although both intrinsic motivation results in self-intentional, “autotelic” activities, intrinsic motivation is a more encompassing concept and is less object specific than interest (Hidi, 2000, p. 317). Interest may be viewed as a sub-class of the general class of intrinsic motivation. It is because of this object specificity of interest that individuals can become

enthused or inspired with content areas, and then the individuals may come to view a topic as engaging and in a positive light for a longer period of time (Rheinberg, 1998 as cited in Hidi, 2000). In keeping with this view, Hidi and Baird (1998) explain individual interest as being associated with intrinsic motivation and situational interest as being externally controlled motivation. It is the latter that underpins the catch/trigger model in this study.

Schiefele (1999) takes issue with Deci, and Hidi, and Baird (1998). Schiefele (1999) argues that all interest is the antecedent of intrinsic and extrinsic motivation. Hidi and Harackiewicz (2000) answer Schiefele's supposition by contending that individual interest is germane to intrinsic motivation whereas situational interest may precede the eliciting of intrinsic motivation. They suggest that only when situational interest is "held" it is intrinsically motivating. Hidi (2000) draws from Berlyne (1971, 1974) to explain the relationship between situational interest and intrinsic motivation. She suggests that situational interest may be best understood as the antecedent of specific cognitions that determine the strength of arousal in a situation. The degree of arousal then determines whether or not the individual will participate in an activity. When sufficient situational interest is aroused for action to ensue, the activity can be deemed intrinsically motivating (Hidi, 2000; Sansone & Smith, 2000). My study respects the position of Hidi (2000) as well as Hidi and Harackiewicz (2000) because the majority of studies that investigate intrinsic motivation use interest as one of the many direct measures of intrinsic motivation.

Hidi and Harackiewicz (2000) argue that the debate over how intrinsic motivation is affected by extrinsic rewards has hindered studies in situational interest. Deci, Koestner, and Ryan (1999) conducted a meta-analysis of 128 experiments that examined how extrinsic rewards affect intrinsic motivation. The findings demonstrated that external rewards undermine intrinsic

motivation (as cited in Hidi & Harackiewicz, 2000). According to Hidi and Harackiewicz (2000), this has resulted in researchers viewing intrinsic motivation as superior as and more appealing than those externally triggered.

Hidi and Harackiewicz (2000) posit that the findings of the meta-analyses are premature and flawed. Hidi (2000) suggests that the findings from studies that focus on the effects of external rewards on short term and simple activities should not be assumed for long-term, complex activities. Further, Hidi states that as a result of the findings of the meta-analyses, all research regarding external controls became suspect and this has caused reluctance to research situational interest as an effective motivator of academic performance. Deci, Koestner, and Ryan (2001) revisit their findings from the meta analyses, and they still support the claim that tangible rewards undermine intrinsic motivation. The purpose of this study is not making a case for or against whether or not tangible rewards abate intrinsic motivation. It is attempting to see if using Berlyne's collative variables and situational factors (extrinsic motivation) to create a lesson sequence will trigger/catch situational interest. The goal, however, is to arouse students to action so that intrinsic motivation may be experienced (Hidi, 2000). Theory of integration of internal and external factors advanced by Deci and Ryan (1992, 1999) is a powerful argument for how the relation between motivation and interest should be viewed. Hidi and Berndorff (1998) suggest that eliciting situational interest in individuals is highly representative of the integration between external and internal factors. More investigations that consider external interventions that promote situational interest may shed light on the cognitive value of this integration. The educational value of such research is that sustained situational interest may incite interest in school tasks where students do not have pre-existing individual interest (Bergin, 1999; Hidi & Harackiewicz, 2000; Mitchell, 1993).

According to Deci and Ryan (1991), “Interest is conceptualized as the core affect of self—the affect that relates one’s self to activities that provide the type of novelty, challenge, or aesthetic appeal that one desires at the time” (Deci & Ryan, 1991 as cited in Deci, 1992, p. 45). As such, it is only when the needs or desires of self align with the activity will a person experience interest. Thus, the starting point for the analysis of interest in self-determination theory In self-determination theory, when a person experiences interest, their behavior is characterized by concentration and engagement, because there is a match between the people’s needs, desires, and capacities, and the characteristics of the activity. Deci (1992) asserts that when children are free from biological urges they focus their attention on activities that have this relationship between person and activity in a social setting. Deci (1992) sets forth a multidimensional construct to explain the theoretical structure of intrinsic motivation and the function of situational interest. He contends that situational interest cannot be conceptualized or measured by a single concept. He suggests three person-activity categories that should be considered: (a) the person-activity component, (b) the experiential component, and (c) the dispositional component.

No one theoretical interpretation has been able to explicate all of the factors that are involved in what interests students or their lack of it (Snowman & Biehler, 2000). Investigators in the study of interest take issue with the educational theory of behaviorism--the theory of choice in the first half of the 20th century—because it did not lend much credibility to affective constructs or to energetic concepts that could not be observed (Hidi, 1990; Shraw and Lehman, 2001). Behaviorism has not adequately answered the idea that humans have intrinsic psychological needs that are not reinforced and that are motivating. Behaviorism studies the relationship between individuals’ environment and their behavior without consulting the

hypothetical events that occur within the mind (Carlson & Buskist, 1997). Behaviorism has failed to address why people persist in non-reinforced behavior for no reason other than they find the activity interesting (Deci, 1992). Behaviorism does not acknowledge the concept of free will and it abnegates the idea of a specific motivation of behavior. The growing literature in interest research makes a strong case that behaviorism is single-minded in its view that motivation will only occur if a response is reinforced. Further, the body of research is challenging the premises that man is totally controlled by his environment and that behavior is only shaped and maintained by consequence (Skinner, 1971). The tenets of behaviorism are not providing answers to the findings in interest research that have shown that children and adults who are interested in particular activities engage in activities for longer periods of time, learn more, are more attentive, and enjoy their involvement to a greater degree than people without such interest (e.g., Ainley, 1994, 1998; Chen & Darst, 2001; Chen, Darst, & Pangrazi, 1999; Hidi & Harackiewicz, 2000; Prenzel, 1988; Renninger; 1992; Schiefele, 1991, 1996). The self determination theory offers a plausible explanation by viewing an individual's basic needs as the impetus for motivating behavior.

As other theories in educational research began challenging the tenants of behaviorism with competing claims, cognitive science had to welcome into the pages of their conservative journals the theory that was suggesting that affective factors do play an important role in information processing. Although science slightly opened the door to the possibility that such factors may contribute to greater cognition, it wasn't until researchers such as Bereiter, Piaget, and Csikszentmihalyi extended this theory through their research that interest started to be seriously investigated (Hidi, 1990). According to Hidi, due to this crack in the door, a "renaissance" in interest research took place in the 1980's (1990).

2.2.3 Piaget's Equilibration Theory

As far back as Plato, cognitive conflict or incoming information that challenges information that is already stored in the central nervous system has been viewed as playing a central role in cognitive development (Chapman & McBride, 1992). Having written a book with Piaget early in Berlyne's career, it is no surprise that Piaget's equilibration theory is a theoretical building block of Berlyne's theory of collative motivation (Day, 1977). Equilibration refers to the biological drive to produce an optimal state of equilibrium between an individual's cognitive structure and the environment. During each stage of development, the individual connects to certain mental structures to make sense of the world. This process is the adaptation and the organization of incoming information with the individual's existing mental structures or schemes. When external reality does not match with the individual's logical internal mental structures, a state of disequilibria occurs. Equilibration then takes place to bring balance between assimilation and accommodation. Assimilation is the process of fitting new information into an existing scheme. Assimilation reinforces existing beliefs and biases. Accommodation, on the other hand, is the process of modifying or changing internal mental structures to provide consistency with external reality (Piaget, 1985).

According to Piaget, human beings continually attempt to make sense of the world around them. In a state of equilibrium, an individual is satisfied with a mode of thought. When this mode of thought is disturbed or shortcomings of the mode of thought become apparent, the individual reaches for a more sophisticated mode of thought to eliminate the shortcomings. This effort to maintain a balance allows for cognitive development and effective thought processing. Piaget asserts that cognitive development is contingent on the following four factors: the

physical environment, the process of biological maturation, the experience with the social environment, and the act of equilibration (Piaget, 1985).

Doll (1993) makes the case that curriculum should be designed with Piaget's self-organization theory as a basic assumption. He argues that classroom pedagogy does not make serious inquiry into assumptions, beliefs, and paradoxes as Socrates did; rather, it begins with what is an absolute or self evident and moves in a linear fashion merely to reinforce or further establish what is already known. Doll writes, "One requirement is perturbation. A system self-organizes only when there is a perturbation, problem, or disturbance—when the system is unsettled and needs to resettle to continue functioning. As Piaget says, this unsettlement (disequilibrium) provides the "driving force" of redevelopment" (Doll, 1993, p. 163.) If such a perturbation is not incited by curriculum, Doll argues, like Piaget, those organisms will continue in past patterns for as long as possible and that such state of equilibrium hinders cognitive development.

To enhance opportunities for cognitive development, teachers should create disequilibrium in students' minds. Doll (1993) suggests that educators provide a perturbation that bothers the student in a deep structural sense—"they must ask the student to doubt in a fundamental way the procedures being used and the assumptions being made" (Doll, 1993, p. 83). This will cause a state of disequilibria in the individual, and it will require him to self-organize. It is this need for self-organization that will provide the urge to find an explanation for all phenomena that are unaccounted for or, if the individual senses that there is something wrong with one's knowledge, this need for self-organization will generate a striving or endeavor to locate it and make it right. If self-organization creates a biological drive to seek knowledge to address such perturbation, are there variables that may help teachers create such perturbations?

2.3 Interest and Relation

Interest research has established relatedness to three variables in the pursuit to understand the interest construct in the role of learning: affect; curiosity; and attention. Because this study builds theory regarding lesson design that creates student situational interest, it is important to illustrate the role of each of these variables in the interest construct. For this reason, the following sections are committed to providing an understanding of this relationship.

2.3.1 Affect

Affect includes such factors as emotions, interests, appreciations, attitudes, desires, impressions, feelings, preferences, temperament, aesthetics, and like concepts (Kaplan, 1986). Research suggests that affective variables play a critical role in knowledge acquisition (e.g., Alexander, 1997; Hidi & Baird, 1986). Increased affective functioning is associated with interest. It is mainly a positive experience that is linked to engagement and liking, but interest-based activities may also have negative aspects. Situational interest is an affective reaction that may or may not last, and it is generated by a particular condition or object in the environment (Hidi, 1990; Hidi & Anderson, 1992; Krapp et al, 1992).

Even though researchers associate situational interest with pleasure and liking (Deci, 1992), situational interest may have a negative tone associated with it (Ainley, Hidi, & Berndorff, 1999; Berlyne, 1971; Hidi, 1999; Hidi & Harackiewicz, 2000). For instance, medical students may find dissecting cadavers interesting, but the affective tone of the experience may be negative (Hidi & Harackiewicz, 2000). If this is assumed as an accepted proposition in interest theory, there is a limitation that is presented with using the Situational interest Scale to measure the degree of situational interest in this study. Chen, Darst, and Pangrazi (1999) only use *Instant Enjoyment* as one of the dimensional keys in their instrument. What if a teacher uses *surprise*,

complexity, ambiguity, novelty, change, and indistinctness to create a lesson sequence that is disturbing to the students yet it incites situational interest? The dimensional keys of the scale would not measure such an event. For instance, if *Instant Distaste* has the ability to trigger situational interest with equal probability as *Instant Enjoyment* but it is not included as a dimensional key in the instrument, it suggests that the instrument may not be truly discerning how much situational interest is being experienced by the students. To address this limitation, teachers will be encouraged in this study to create learning sequences that do not elicit a negative affect response.

Although still much is to be learned about the relationship between individual interest and situational interest, what is known about the relationship between these two forms of interest as they relate to affect must be understood. Individual interest is described as an individual's relatively enduring predisposition to attend to certain objects, structures, and events, and to engage in activities (Krapp, et al., 1992). Rather than enduring, situational interest is an affective response that may be a short term reaction or it may be "held" (Mitchell, 1993). Hidi (2000) views the triggering or catching situational interest as the first stage of situational interest, and the maintaining of situational interest as the second stage. It is in the second stage where the relationship between situational interest and individual interest takes on pedagogical significance because it is in the period of maintaining situational interest when intrinsic motivation is experienced. It must also be explained that not all interest researchers agree with this supposition.

Iran-Nejad and Cecil (1992) deny any relationship between interest and emotion, viewing it instead as the cause and consequence of intellectual functioning. If interest is conceptualized from the self-determination theory, Iran-Nejad and Cecil's view must be dismissed, because

psychological needs such as autonomy, competence, and social belongingness are affective variables.

Of utmost curricular importance, once situational interest is held, it may lead to an enduring individual interest (Hidi & Harackiewicz, 2000). When an individual interest is maintained over time, an affective-cognitive synthesis occurs. If this synthesis occurs, the individual experiences deep feelings of enjoyment with the cognitive qualities of focused attention, perceptions of value or importance, and meaningful thoughts—or “flow” (Rathnude & Csikszentmihalyi, 1993). Hidi (2000) argues that if situational interest is maintained that there is an increased probability that it will contribute to a long lasting individual interest, where this affective cognitive synthesis will occur. For this reason, this study claims that there is a powerful educational value in adjusting instruction to elicit situational interest as a means of inciting individual interest, where such a “flow” may be experienced by students.

It must be further noted that individual interest can influence situational interest by modifying the impact of environmental forces on the psychological state of interest (Bergin, 1999). This is why it is so important in this study to have the students select from among a number of lessons that will be offered to them in a particular period of time the one that is most “interesting” to them.

2.3.2 Curiosity

Although this study is on situational interest, the concept of curiosity must be understood concurrently because empirical findings in the literature reveal situational interest and curiosity share many characteristics. Curiosity is “a behavior without definition” (Fowler, 1965 as cited in Day, 1968, p. 37). In their early work, Berlyne and Day (1968), associate the verbal response of “interesting” to a “specific curiosity”. Berlyne believes that conceptual conflict elicits a desire to

explore and triggers situational interest (Hidi, 2002; Hidi & Harackiewicz, 2000) Arnone (2003) observes curiosity as a "...heightened state of interest...resulting in exploration..." (p. 1). There is still considerable overlap in how researchers view curiosity and interest. Although for many years the research on curiosity called for the concept to be consensually defined, interest could not be separated from curiosity. For example, Voss and Kellar (1983) suggest that curiosity cannot be adequately defined to unify the literature on curiosity and interest because "Curiosity is a motivational prerequisite for exploratory behavior" (1983, p. 17). Voss and Kellar have conducted extensive literature review on the theories and results of curiosity and its relation to exploration. The authors conclude that a single unified concept of curiosity and exploratory behavior cannot be conceptualized because there exists a number of empirical studies that analyze curiosity using many different variables; one variable is interest. They state that the confusion is provoked by the fact that *curiosity* is studied as a behavior as well as a hypothetical construct to explain the same behavior. On the other hand, *situational interest* is generated by particular conditions and/or objects in the environment that focus attention; and it represents an affective reaction that may or may not last (Hidi, 1990; Hidi & Anderson, 1992; Krapp, et al, 1992; Murphy & Alexander, 2000; Hidi, 2000). The researchers have not explained the distinct role that each curiosity and situational interest plays as a motivator for exploratory behavior. Such a lack of distinction between the two constructs (curiosity and interest) makes it difficult to study only the concept of situated interest in my dissertation. Furthermore, the Situational Interest Scale created by Chen, Darst, & Pangrazi (1999) used as the framework for questions in the student interviews includes exploratory intention as one of the dimensional keys to measure situational interest. In addition, the use of Berlyne's theory of collative variables, lacking distinction between curiosity and interest, in my dissertation complicates further. However,

Berlyne is cited alike by both interest and curiosity researchers (e.g., Hidi, 2002; Maw & Maw, 1964). Due to the multifaceted nature of curiosity, this study focused on the distinction made between situational interest and curiosity proffered by Hidi and her colleagues. For example, Hidi and Anderson (1992) in their chapter *Situational Interest and Its Impact on Reading and Writing* associate curiosity with short term states and that curiosity reaches an optimal plateau; whereas, interest can be sustained after optimal discovery. This stance captures the goal of my study that explores the features of lesson design that contribute to situational interest that is “held” or sustained.

2.3.3 Attention

Berlyne could perhaps be considered the precursor to brain-based learning that is exemplified by such researchers as Jensen (1994, 1995, 1997), Caine and Caine (1994), Sousa (2001) and Wolfe (2001).

Drawing from early work of Sokolov (1960; in Lynn, 1966; in Berlyne, 1960; 1965), Berlyne argued vociferously that physiology and psychology must both be considered in motivational educational theory (1960; 1965). He pointed especially to the reticular activating system (RAS) and the role that it plays in attention, arousal, and the orientation reaction.

The reticular activating system controls awareness levels. Recent brain-based researchers are upholding the role of the RAS in learning. According to Wolfe, the reticular formation, neurons in the thalamus and other neurons from various sensory systems comprise the reticular activating system. This system receives input from the body and changes the level of cell excitation to meet changing conditions in the environment (Wolfe, 2001). It also filters out thousands of stimuli in the environment and allows the brain to focus on relevant data. In this study, the collative variables and situational factors used to create the lessons in the learning

sequence will be designed to stimulate the reticular activating system. Wolfe says this about the power of the RAS “You could say that this small area of the brain holds the key to life itself” (2001, p 23). Like Berlyne (1960, 1963, 1965), Wolfe also posits that “Novelty is an innate attention getter” (2001, p. 82), and that novelty, intensity, and movement can be used to influence what the brain pays attention to. According to Wolfe, current brain-based researchers have established that it is meaning and emotion that are the most critical factors that will sustain attention (2001).

Regarding meaning, Wolfe maintains that if your brains cannot seek out previously activated networks into which new information fits, it is less likely to attend to it. If students are confronted in a classroom with information that has not been previously stored, they will search for a neural network that will help them make sense of their world. If such information cannot be found, the information will be discarded as useless (2001). She further argues that the brain is biologically programmed to attend to strong emotional content. She cites Robert Sylvester who wrote *Celebration of Neurons* when he states “Emotion drives attention and attention drives learning.” (in Wolfe, 2001; Sylvester, 1995). For these reasons, Wolfe makes the case that educators must be cognizant of the processes that the brain uses to attend to information. Hence; it is important that the teachers who will participate in the experimental groups are aware of the role that emotion and meaning play in attending to information. (2001).

To understand how current discoveries in brain-based research are describing the role of physiology in learning theory, it is important to cite some of the earlier researchers that have contributed to the literature regarding arousal and learning.

2.4 Variations in Situational Interest

Various researchers have contributed to a conceptualization of situational interest.

Although very few researchers have examined the perception of situational interest from the interpersonal realities of actors in a social setting (Glaser & Strauss, 1967), the merits of their claims must be examined when building situational interest theory. The following sections discuss the most prominent findings in interest research.

2.4.1 Berlyne—Collative Variables for Conceptual Conflict and Resolution

D. E. Berlyne was one of the first researchers to examine environment-based causes of interest (Berlyne, 1960, 1971, 1974; Hidi, 1990; Hidi & Anderson, 1992). Berlyne's early work is premised on the *drive reduction theory*, which basically states that people are motivated to reduce or eliminate aversive conditions. As other researchers investigated curiosity and exploratory behavior, the *drive reduction theory* was extended to include a psychological "state of drive" that emerged from conditions of "boredom" and "under stimulation." Berlyne's experiments challenged this notion that drive reduction theory based on the psychological state be the sole basis for reinforcement. Berlyne pointed out how stimulus characteristics influenced perceptual processing of and response to visual and auditory patterns (1955, 1957, 1958, 1960, and 1965). Much of Berlyne's early work concurred that an individual under stimulation became a source of high drive in motivating exploratory behavior. His later work demonstrated that under some conditions slight increases in stimulation could also be reinforcing. His experiments suggested that *collative variables* or formal properties of stimuli incite interest, what he termed as "epistemic curiosity". (Berlyne, 1960, 1965). His experiments indicated that such variations, opposite in character as familiar-novel, simple-complex, expected-surprising, clear-ambiguous, and stable-variable increased interest monotonically (Berlyne, 1960, 1971, 1974; Hidi, 1990; Hidi & Anderson, 1992). Each collative property of the stimulus disturbs the steady state of expectancy. Berlyne maintains that these external variables affect the psychological state of

individuals by eliciting conflict and uncertainty. Such conflict and uncertainty results in the physiological phenomena of arousal, and arousal plays an important role in how these variables affect the psychological state of an individual. Individuals seek out optimal arousal from environments, which are characterized by the inverted-U function, where interest declines after an optimal level (Berlyne, 1960, 1971, 1974; Hidi & Anderson, 1992). However, Berlyne's later experiments demonstrate that collative properties sustain situational interest rather than showing a decline after an optimal level is achieved. Although it is commonly understood that an increase or a decrease in arousal can be motivating, a function specific to an increase in arousal is the genesis of curiosity and exploratory behavior (Hidi & Anderson, 1992; Izard, 1977). Although Berlyne concludes that collative variables increase interestingness monotonically as opposed to the inverted U function, he never clearly differentiates curiosity from interest (Hidi & Anderson, 1992). The bearing of this relationship on curiosity and interest is also demonstrated by recent research.

Despite the fact that situational interest may be triggered by other stimulus characteristics, Berlyne has established the power of collative variables to “trigger” (Hidi, ?) situational interest. Because collative variables have the potential to “catch and trigger”, many fields of study draw from Berlyne's work. Such fields include architecture (Wohlwill, 1976), advertising (Lord & Burnkrant, 1993), engineering and aesthetics (Lavie & Tractinsky, 2004), music (North & Hargreaves, 2000) and psychology (Charlesworth, 1969). In line with these studies, my study uses the “catch/trigger” model in the design of a lesson sequence. My study, therefore, is predicated on the work of Berlyne, and on the more recent research that has added new theoretical perspectives to his theory. For the purpose of my research, it is important that I provide a brief overview of Berlyne's theory.

Berlyne (1963, 1965) maintains that a learner's drive for "specific exploration" may be initiated by "collative" properties in the stimulus field (1963, 1965). Specific exploration is a mental state that is initiated by a concern with a particular topic and is not successfully concluded until a symbolic formula that can eliminate specific uncertainties has been reached. Specific exploration may also be called "epistemic" curiosity. This arises from an uncertainty of a specific environmental object. Epistemic curiosity leaves the learner with some uncertainty that can only be reinforced by information that is capable of reducing that uncertainty. It results in an exploratory response that drives the learner to access information to relieve the curiosity. The collative properties that may initiate specific exploration are novelty, change, surprisingness, incongruity, ambiguity, indistinctness, and complexity (Berlyne, 1963, 1965). Berlyne (1963, 1965) defines the characteristics of these properties as follows: *ambiguity and indistinctness--there is a gap of available information; novelty and complexity--there is uncertainty about how a pattern should be categorized or what labeling responses should be attached or what overt response is appropriate; and surprisingness and incongruity--there is a discrepancy between information embedded in the learner's expectation and the information embedded in what the learner perceives.* Through his experimentation, Berlyne (1971, 1974) finds these stimulus characteristics elicit an increase in situational interest monotonically or that the intensity of one of an ordered pair increases rather than tracing the path of an inverted-U. For this reason, I use Berlyne's collative variables as a logical starting point to integrate into a teacher's learning sequence to enhance situational interest.

2.4.2 Schank—Interestingness in Discourse Processing

Besides Berlyne, Schank is one of the early researchers to conduct studies on situational research. Schank specifically focuses on the role of interestingness in discourse processing. He

asks three questions: How do we pay attention to interesting ideas? Where does the concept of interest come from? Where will we find interest in discourse processing? (Schank, 1979; Hidi & Baird, 1986). Like Berlyne, he finds that unusual things that deviate from our expectations are more interesting than usual ones. He also concludes that any information interesting is directly proportional to its 'abnormality' or 'non-normative' quality.

Schank's research describes how interest emerges from the schematic nature of story processing. He determines that interestingness and event structure are intimately related. In story structure, he suggests that concepts like death, sex, and danger are 'absolute' interests; whereas, certain characteristics such as unexpectedness and relatedness are 'relative operators' that operate on these concepts. For example, the collative property of surprise could operate on the concept of death. Most importantly, Schank identifies three conditions which elicit interest in the reader: First, when schema-congruent expectations are violated or deviated from; second, when schema-relevant information is missing; and finally; and third, when content refers to salient themes which transcend schemas. In one and two, a piece of information is interesting because it violates expectations based on the event structure by incongruence or anomaly. In the third instance, a piece of information is interesting not because of its relationship to event structure, but because of its association with a cross-contextual theme (Schank, 1979; Hidi & Baird, 1986). Although Schank identifies thematic variables in story processing, his work confirms Berlyne's claims because collative variables in story processing elicit interest in readers. Hidi and Baird (1986) point out that Schank's research did not explain what was responsible for the interest response itself. For instance, what if a reader encounters a story in which schema-relevant information was missing and showed no interest in searching for it?

One of Shank's main contributions to the body of literature in situational interest, however, is his claim that interest is essential to the strategic allocation of limited cognitive resources. Schank refers to this as *interest-based parsing*. This is where readers selectively focus their attention on information that is judged to be interesting. Although Schank's claim is hailed as a major contribution to interest research, the question must be asked if his interest-based parsing theory is just an evolved version of the habituation paradigm. This paradigm states that when an infant is presented with a novel event that the baby will use all of its attending resources to keep the event continuing. Despite the similarities, interest-based parsing does call into question whether or not an individual's cognitive resources are being diverted from important information in text to attend to that which is merely interesting.

Schank did acknowledge in his study that what an individual deems to be "interesting" may not be important to the meaning of the text. Therefore, a reader may engage in part of the text that is interesting but fails to identify material that relates to the main themes of the text (Schank, 1986). His claim supports Berlyne's research on collative variables (Berlyne, Craw, Salaatek, & Lewis, 1963). However, according to Berlyne, it is the orientation reaction that accounts for such strategic allocation of resources. My study assumes that interest is essential to the strategic allocation of limited cognitive resources and the orientation reaction accounts for strategic allocation of resources. My research seeks to investigate: if subject matter in a lesson is violated or deviated from the student's knowledge expectation as suggested by Schank and Berlyne, will it result an increase in student situational interest?

2.4.3 Kintchsh—Emotional Interest vs. Cognitive interest

Kintchsh (1986) built on the work of Schank; however, Kintchsh differentiated between *emotional* interest and *cognitive* interest. The former is produced by a direct emotional response,

and the latter interest is produced by making relationships between incoming information and one's background knowledge. Emotional interest is created through events that have an arousal function such as violence and sex; whereas, cognitive interest results from events which are interesting because of the role they play in some complex cognitive structure or the surprises that they hold. Kintsch suggests that cognitive value interest is determined by the interaction of three factors: how much one knows about the subject matter, the degree of uncertainty that the text generates in the reader, and how well the information can be meaningfully related to other sections of text. For cognitive interest to occur, Kintsch maintains that knowledge and uncertainty must peak at the right amount of knowledge and uncertainty. It is important to note that Kintsch's work on the differentiation between emotional and cognitive interest has never been tested empirically (Shraw & Lehman, 2001). Although his observations about emotional and cognitive interest are conjectures and not empirically studied, it may be a valuable starting point in investigations.

From his research findings, Kintsch does agree with Berlyne when he states "What creates interest is not novelty *per se*, but novelty in comparison with a particular set of previous experiences" (1986, p.183). What is significant to my study is that the three conditions proffered by Kintsch may be significant considerations prior to using the "catch/interest" model to create the introduction to the lesson. For instance, it may be valuable because the model makes the teacher consider (a) the preconceived ideas that students have about the subject matter; (b) the degree of uncertainty to incorporate in the introduction; (c) and how well this optimal challenge is meaningfully related to the rest of the learning investigation. These conditions can be meaningfully translated to the design of lessons in my study.

2.4.4 Iran-Nejad—Stories and Resolution

Iran-Nejad (1986) supports Kintsch's (1986) work with his finding that stories containing surprises induce higher ratings of interestingness *only if* these stories contain a successful resolution. Iran-Nejad (1986) posits that the experience of interestingness appears to be a consequence, rather than a cause, of the intellectual activity involved in resolving some issue. He concludes with the belief that missing or anomalous information or thematically salient information may trigger an affective response such as surprise immediately, but interest is not created *until* the reader enters the process of bringing resolution to the incomplete understanding of text (1986). For this reason, a consideration for this research is if collative variables in a lesson sequence will commit students with the responsibility of bringing resolution(s) to a key problem related to the content to increase situational interest?

2.4.5 Hidi and Colleagues—Reading and Writing

Suzanne Hidi has been perhaps the most prolific researchers in interest research. There is not an empirical investigation within the field of interest that does not cite her work. From the early 1980's to the mid 1990's, Hidi and her colleagues devoted their research to situational interest and its impact on reading and writing. Due to children's reliance on textbooks, it was important for Hidi and her fellow investigators to identify which ideas in textbooks had the ability to create interest in a manner that they may override individual differences. Their work assumed that there were certain topics, ideas, and themes that have universal interest, such as death or sex (Hidi & Anderson, 1992). It was felt that if such characteristics could be identified as consistently interesting that texts could be designed and chosen with these factors in mind (Hidi & Anderson, 1992).

Suppositions that override individual differences help to edify the theoretical background for my study. My study also assumes that Berlyne's (1960, 1963, 1965) collative properties, which evoke arousal, may have the ability to override individual differences and will create an interest that is consistently shared by most of the students in the class. Berlyne did demonstrate in his later works that, despite individual differences, people were generally consistent in their aesthetic reactions in studies that he used the collative variables (complexity and novelty) to evoke interestingness (Berlyne, 1974, p. 22; Hidi & Anderson, 1992). Other studies also support the assumption that situational interest can be experienced across a group of individuals by particular stimulus characteristics (e.g., Schank, 1979; Kintsch, 1980; Hidi & Baird, 1986).

The first study by Hidi, Baird, and Hildyard (1982) ascertained the effects of situational interest in school texts on comprehension and recall. The study attempted to find out if the interesting text segments are also the important ones; and to discern how interest and importance in school texts affects students' ability to comprehend, process, and learn information. Each type of text in textbooks consisted of three categories: narrative, expository, and mixed. Each piece of text was rated sentence-by-sentence by five adult raters for importance and interestingness. This research procedure was used to determine whether or not the five evaluators will be consistent in their perceptions of what counts as "interesting" in the three types of passage. According to the five who rated the passages, the three passages were equal in the ideas that were identified as important. Ideas in the text that were rated as interesting, however, were 30.5% for mixed passages, 36.5% for narratives, and only 2.5% for the expository pieces. The results revealed only in narrative texts interesting ideas were correlated to important ones.

To determine if children retained the most important information, the children were asked to read the passages until they felt they had learned them. They were then given a test for

immediate recall and delayed recall four days later. Immediate recall did not show any significant differences among the three types of texts. The results implied that when interesting and important ideas affect cognitive processing independently, interest may actually interfere with the processing of important information. It also suggested that interesting information may only contribute to marginally related ideas. Such ineffectiveness of interesting ideas as they relate to important ideas in text has been also supported by the work of Garner (1992), Hidi and Anderson (1992) and Wade (1992). The importance of this work to this study is that when the teachers create learning sequences that use the collative variables, the teachers need to be cognizant that the “interestingness” that they are trying to incite must work in tandem with their cognitive expectations.

Hidi and her colleagues followed their initial study with a series of investigations to extend their findings as to how important and interesting ideas in text effect learning and recall (Baird & Hidi, 1984; Hidi & Baird, 1983, 1984, 1986; Hidi & Anderson, 1992). What was salient in these findings was that children attend equally to interesting and important information, and that interestingness of the ideas does play a role in determining what is remembered. Most importantly, Hidi and Baird (1983, 1986) and Hidi and Anderson (1992) conducted a qualitative analysis of particular categories of text features that were associated with high recall, whether these features were important or not. First, they found that simple descriptions of activities, like how to make a globe out of an orange, were highly recalled. Next, they found that children retained all novel or surprising information with a higher frequency. Further, enriched imagery enhanced recall. Finally, when information was quantified or arranged in lists, such as objects, properties, or countries, it was easily retrievable (Hidi & Anderson, 1992; Hidi & Baird, 1983, 1986). Although recall will not be tested in my study, it will be observed in the quantitative

comparison of test scores. Hidi and her colleagues' studies suggest that using the collative variables which include novelty and surprisingness may enhance recall in a lesson.

Once interesting text features that enhanced were identified, Hidi and Anderson (1992) and Hidi and Baird (1988) used these text features, as well as the ones identified by Anderson, Shirey, Wilson, and Fielding (1987) (as cited in Hidi & Anderson, 1992; Anderson et al., 1987) to investigate three design strategies that would be used to establish whether these features in texts would increase interest and facilitate learning. The first strategy used novelty, character identification, high activity level, and life themes as the base of the text. The second strategy was to relate the interesting text features to the important part of the text. The third strategy required the reader to resolve incomplete information given in text with some understanding of the important pieces of text. The goal of the study was to determine which strategy would result in the greatest recall of important information in a text.

The participants of the study involved 44 students from two fourth-grade classes and 66 students from two sixth-grade classes. Text included versions of the three strategies which were randomly assigned to approximately equal groups at each grade level. Students were given 25 minutes to read and study the texts. Students were asked to recall what they had read immediately after the study and one week later. The results showed that only the first strategy resulted in significant increases of higher recall at the elementary level. The other two strategies only resulted in an increase in the participants' interest rating. The design of the study could not account as to why the first strategy yielded the highest recall or why blending interesting text features that have proven to increase recall with the important themes in the text only proved to be interesting to the students (Hidi & Anderson 1988; 1992). This finding again brings up the point made by Schank or by the habituation paradigm. A problem is if teachers do use familiar-

novel, simple-complex, expected-surprising, clear-ambiguous, and stable-variable characteristics to guide the creation of the lesson sequence, will students only attend to that which is interesting and ignore the important cognitive aspects? If these two cannot be successfully integrated what good are collative variables for motivation (Berlyne, 1963)?

Such a finding could be problematic to my study. My study will use collative variables to increase situational interest with the assumption that this interest will result in a motivational disposition across individuals that will encourage persistence in the learning event. If this study only results in a temporary increase in situational interest with no cognitive gains, this approach to lesson design may contribute little value to educators whose main goal is to increase standardized test scores. Even if this research does result in such a finding, it was a step in responding to Hidi & Harackiewicz's (2000) call for research investigations that address the two phases of situational interest research. First, this study sought to understand the attention provoking factors of triggering/catching interest. This was to answer Hidi and Harackiewicz's (2000) argument that there is a need for studies that identify educational interventions that trigger situational interest. Secondly, this research sought to understand the situational factors and/or motivational or affective factors that will hold situational interest. This was in keeping with the authors' second argument that investigations that identify the interventions that will promote and maintain situational interest over time are needed (Hidi, 1995; Hidi & Harackiewicz, 2000).

In the 1990's, Hidi and her fellow investigators shifted their focus to the effects of interesting topics on children's writing performance. Hidi and Anderson (1992) and Hidi and McLaren (1990) felt because topic interest had demonstrated a facilitative effect on comprehension and recall that it would produce a similar finding in regards to their writing performance. Contrary to such beliefs, their findings found that topics of high-interest did not

result in better expositions than topics of low-interest. It was found that the students lack of sufficient knowledge of either high-interest or low-interest topics is the factor that interfered most with their performance. Using this information, Hidi and McLaren (1991) set out to discover if high interest topics were combined with topic relevant information would motivate the power of interest and produce better writing. In this study, Hidi and McLaren used topics on the basis of what children had found interesting or boring from the first study. Sixty 6th grade students were randomly assigned a text of one of four topics to read and study. Then, they were asked to answer questions about their texts. This was intended to equip the children with sufficient knowledge to write their essays. The high-interest topics were “Living in the Future” and “Space Travel” and the two low-interest topics were “Living in the City” and “Traveling on Land.” These topics came from a list of 30 topics and 20 themes that the students in the first study were asked by the researchers to rate according to the topic or theme’s interest value.

Once both groups had taken the tutorial for the text, the experimental group was asked to write about the topic that had sufficient material that had been provided by the tutorial text. The control group was asked to write about an entirely different topic, where no tutorial text had been experienced by the student. It was expected that the children in the experimental group, who had studied the topic-related information the week before, would do significantly better than the control group due to their newly acquired knowledge about the topic. The findings defied expectations. The low-interest pair produced a longer and a higher quality piece of writing. It was found that tutorial intervention was not effective in equipping students with the knowledge needed for quality writing to emerge from the motivation that accompanies high interest topics. What was salient in the data was that it was the children’s background knowledge that facilitated better writing performance, even when the topics were deemed as boring. Hidi and McLaren

(1991) suggest that knowledge factors of a topic may lessen the motivating effect of interest on writing performance.

The question may be asked in both of these studies how the findings may have been altered if students were allowed to generate the list of topics of interest. Hidi and McLaren (1991) argue that studies that support self-selection (i.e., Grandwhohl & Schumacher, 1989) versus imposed topics must also consider the distinction of personal versus school topics. They provide the example hockey versus circulatory system, and they point out that personal writing is more apt to lead to quality in writing performance because it represents a condition of high knowledge and high value (Hidi & Anderson, 1992; Renninger, 1992). This thinking assumes that students cannot be provided with choices for “school topics.” For instance, students may be given the choice of studying the function of the circulatory system from the perspective of “Learning the Circulatory System from a New Drug that Eats Away Plaque from the Wall of Arteries” or they may be given the choice “The Function of the Circulatory System” or they may be asked to self select a perspective for studying the circulatory system of their own. The first choice provides personal relevance whereas the latter topic intends to merely inform. On the other hand, the third choice allows the students with the best opportunity to integrate his/her prior knowledge. A researcher could provide a list of interesting headlines as examples that would study the circulatory system from perspectives that are personally relevant to students; then, the student would be asked to select one or create one of his/her own. This would increase the chance of a condition of high value and high knowledge regarding a school topic.

Finally, Hidi and Anderson, (1992) as well as Hidi and McLaren (1991) assumed that what was rated as interesting to the students in the first study would also be interesting to the totally different students in the second study. This thinking is flawed. Even the current conditions

in a society may alter what is viewed as interesting. Take what was considered the high- interest topic “Living in the Future.” Today, with children having to listen to parents who are losing their jobs, being robbed of their pensions, or having to incur the cost of health care, the once high- topic interest “Living in the Future” may be of no interest to the student—in fact, it might be a depressing experience for the individual. Such facets of how topics/themes are viewed as high- interest or low interest will be considerations for the researcher when students who are involved in this study are asked to rate themes in history for “interestingness.”

2.5 Studies on Personal and Situational Interest

Although Krapp and Renninger have contributed significant work in the field of interest, their work has not specifically focused on situational interest. The work of Renninger has dealt primarily with individual interests in young children (Renninger & Wozniak, 1985), interest and development (1992a), and conceptualizing interest (Renninger, Hidi, & Krapp, 1992). Most of Krapp’s work has focused on the construct of interest (1992b, 1993), interest and achievement (1989, 1992), interest and development (1992c), and interest and motivation (Krapp & Lewalter, 2001). Because the emphasis in interest research has been focused on the intrinsic factors that motivate, very few investigations have focused on external interventions in educational practice that would catch or trigger and maintain situational interest. Although investigating the “holding” stage of interest may yield many more valuable findings to educational practice, it must be also discerned what strategies contribute or have the ability to catch/trigger situational interest (Hidi, 2000; Hidi & Harackiewicz, 2000).

Mitchell (1993) was the first researcher to attempt to “catch” and “hold” interest. He used group work, puzzles, and computers to elicit situational interest in a math class. He triggered and caught interest with these approaches, but these strategies failed to maintain interest over time

(1993). More recently, Harackiewicz et al. (2000) identified that the “holding” factors in a college level psychology course may be better predictors of holding interest. If this is so, investigating external interventions that may trigger or catch situational interest may prove to have little value in educational practice; such supposition cannot be assumed, however, until more research is established that discerns the relationship between what is triggering situational interest and what is holding it.

In physical education, Chen and colleagues (Chen, 1996; Chen, Darst, & Pangrazi, 1999; Chen & Darst, 2001) have identified certain characteristics of activities that elicit situational interest, following up on the work of Reeve (1993). They determined that learning tasks have to provide the learner with novelty and challenge, demand high attention and incite exploration intent, as well as instant enjoyment to promote situational interest. This research argues that such categories do not provide a clear understanding of the features of the learning sequence that contribute to situational interest.

Schraw and colleagues have been, perhaps, the most prolific in the study of situational interest in the most recent years. In 2001, Schraw and Lehman conducted a review of the literature regarding situational interest and provided directions for future research. Also in 2001, Schraw, Flowerday, and Lehman (2001) identified three ways to increase situational interest in the classroom: selecting well-organized texts that enhance interest, offer meaningful choices to students, and providing the sufficient background knowledge that will be needed to understand the content. The most recent review of the literature regarding situational interest was conducted by Schraw and Lehman (2001). In their review they have organized the studies into three main categories: *text-based*, *task-based*, and *knowledge based* studies in situational interest. This review will later address the studies that are most pertinent to the scope of this study. Schraw and

colleagues have also conducted other investigations related to situational interest; however, most of their work has been done in text-based situational interest. Wade, Schraw, Buxton, and Hayes (1993) examined interesting text segments by comparing reading times to recall. They found that portions of text that were rated as more interesting were remembered better than less vivid segments. Schraw (1997) and Schraw, Bruning, and Svoboda (1995) investigated the influence of the vividness of text as a source of situational interest and text recall. Although Schraw, et al. (1995) used a 1,000 word fictional piece and Schraw (1997) used a 1,200 word expository text about the Persian Gulf War, both studies were related to judgments of text interest and recall. Schraw's study in 1998 refuted Garner and colleagues findings that seductive details are recalled well; however, they interfere with the recall of more important portions of text (Garner, Alexander, Gillingham, Kulikowich, and Brown, 1991; Garner, Gillingham, & White, 1989). Schraw's study found no detrimental effect of seductive detail and recalling the main idea in texts.

A few other early researchers have discovered conditions that incite situational interest. Anderson (Hidi, 1990) suggested four attributes that may contribute to text-based interest; novelty, character identification, life themes, and activity level. Mandler (1990) posited that interestingness resulted from incongruity (1990). Deci (1992) stated, "Activities or ideas that people find interesting are usually optimally discrepant from what they know or can do. These activities require people to 'stretch' their capacities or expand their cognitive structures" (1992, p. 50). He concluded, "Considerable research has focused on the characteristics of tasks (and objects) that tend to make them interesting to people. Two closely related characteristics seem to be central: *Optimal challenge and novelty*" (Deci, 1992, p. 50).

Studies of situational interest have been approached in other ways. Sansone and colleagues studied student interest by using interesting-enhancing techniques to self-regulate interest in uninteresting material, such as racing against time or competing against one's self (Sansone & Harackiewicz, 1996; Sansone, Weir, Harpster, & Morgan, 1996). Javorik (1996) used a critical writing technique to survey 65 elementary and secondary teachers to discover what educational interventions were used to incite situational interest. He found that teachers used "hands-on" activities to elicit interest. Bergin (1999) investigated individual characteristics and situational factors that influence interest. He argues that if individual factors and situational factors are integrated into a lesson that more situational interest will occur. The individual factors include belongingness, emotion, competence, utility-goal relevance, and background knowledge. The situational factors that were examined were hands-on, discrepancy, novelty, food, social interaction, modeling, games and puzzles, content, biophilia, fantasy, humor, and narrative. Bergin found that when situational factors interact with individual factors that it affects interest in an activity. For this purpose Bergin was integrated with *surprise*, *complexity*, *ambiguity*, *novelty*, *change*, and *indistinctness* to seek to understand the role that these variables and situational factors play in engaging student situational interest in lesson design.

No matter how situational interest has been studied, the literature has established cognitive and affective factors. First, situational interest is a source of selective persistence, deeper processing, and emotional engagement in task (Mitchell, 1993; Prenzel, 1992; Schiefele, 1996, 1999; Schraw, 1998; Schraw & Lehman, 2001; Wade, 2001). Situational interest also influences transfer and comprehension (Nenninger, 1992), and recall (Wade, Schraw, Buxton, & Hayes, 1993). Further, situational interest plays a role in what one chooses to learn and how well we learn information (Garner, 1992; Schraw & Lehman, 2001). Moreover, situational interest

impacts the use of specific learning strategies and how attention is allocated (Bergin, 1999; Hidi, 1990; Schraw & Lehman, 2001; Wade, 2001). For these cognitive ends, a lesson sequence design that may increase student situational interest may be an important piece afforded to educational policy.

2.6 Summary and Significance to Study

Although the work of Schank, Kintch, and Iran-Nejad is significant to the early work in situational interest, it is the work of Hidi, Krapp, and Renninger on individual and situational interest proliferated in the 1990's. Each of these researchers has played an important role in the conception and expansion of situational interest theory. In an attempt to unify the study of interest under one theoretical framework, researchers brought together in 1992 the most significant studies in interest research in *The Role of Interest In learning and Development*. Since then, this book has served as the springboard for most empirical investigations on interest.

This research builds on the words of Hidi and Baird (1986): “What is central to the response of situational interest is that a person is compelled to increase intellectual activity to cope with greater significance of incoming information” (p. 184). This research assumes that conditions, variables, and characteristics that have been found to incite interest in text-based, task-based, and knowledge based studies is useful as a foundation for a study that intends to build a grounded theory of lesson design that creates situational interest. The nature of this research was to discern if such relationships exist and are sound.

Three theories influenced the design of the learning sequence in this study. First, the Person-Object Theory (Krapp, 1983) provided assumptions that are relevant to this research. Two assumptions were inherent to the design of every lesson. First, an individual is in constant interaction with his environment; and second, a human being has reflexive competence in action

or “the ability to control rationally and intentionally what we do” (Krapp, 1983). The second theory is the Self Determination Theory of Motivation (Ryan, Kuhl, & Deci, 1997). From this theory, it was assumed students participation in an activity will be motivated out of interest in the learning task or for some other outcome that they perceive will result as a product of their participation. Finally, Piaget’s Theory of Equilibrium (Piaget, 1985) was significant in designing the lessons. In keeping with Piaget, Doll’s (1993) suggestion that educators provide a perturbation that bothers the student in a deep structural sense was the initial intent of this study. This aim was modified in the study by the conflicting pedagogical inclinations of the researcher and the participating teacher.

Several researchers are also of particular significance to this study. First, Berlyne (1963, 1965, 1966) whose collative variables (extrinsic motivation) were used to create a lesson sequence that would trigger/catch situational interest. The goal, however, was to arouse students to action so that intrinsic motivation may be experienced (Hidi, 2000). The second researcher is Bergin (1999) whose situational and individual factors are used in this study and inspired this research to survey the students to establish such factors. Once the factors were grounded in the data, these situational and individual factors would be used to nest the collative variables. Finally, the work of Chen, Darst, & Pangrazi (1999), whose Situational Interest Scale would be converted to an open-ended instrument to guide questioning in the student interviews.

The dimensional keys in the Situational Interest Scale was used as an open-ended means to help explore situational interest in this study because the scale used Deci’s (1992) multidimensional construct as its theoretical referent (Chen, Darst, Pangrazi, 1999). This scale was chosen to guide questioning in the student interviews because the dimensional keys were

also derived from the theoretical framework that defines situational interest through concepts that are drawn from the person-object-theory as well as the self determination theory.

In wanting to ground theory in lesson design that creates situational interest, this research wanted understand if the dimensional keys identified in the quantitative research of Chen, Darst, Pangrazi (1999) would emerge in this study. In the person-activity component, an individual experiences interest when an activity that he interacts with is novel, challenging, or aesthetically pleasing. Novelty is conceptualized as a gap in knowledge, information deficiency, or unknown information. According to Berlyne, such gaps in information operate as a trigger to exploratory behavior (1960, 1966). Challenge is seen as a factor that may attract students to engage in an activity (Harter 1998; as stated in Chen, Darst, Pangrazi, 1999). In the interactive experiential category, the functional components are Attention Demand and Sense of Delight (Chen, Darst, Pangrazi, 1999; Deci, 1992). When the person interacts with the activity, these components function as the criteria by which the degree of enjoyment that the person developed and had evaluated as having been experienced by the activity (Chen, Darst, Pangrazi, 1999; Deci, 1992). In the mental disposition category, Exploration Intention, Desire Arousal, and Time Alteration are the functional components. They represent the power of stimulation that can be observed in interest-enhancing activities. According to Chen, Darst, Pangrazi, (1999), each of these functional components plays an important dimension in eliciting a person's sense of relatedness to an activity. Chen, Darst, and Pangrazi (1999) argued that these dimensional keys should be used to measure situational interest to produce valid data regarding the amount of situational interest that was experienced by students. Although these claims were considered in this research, this qualitative study sought to discover if a more specific construct of what contributes

to situational interest would emerge in the multiple data sources over what had been proffered by Chen, Darst, and Pangrazi (1999).

The merit of this study lies in the fact that cognitive theories are not adequately addressing or conceptualizing how motivation and emotional factors are influencing learning (Krapp, Hidi, & Renninger, 1992, p. 4). According to these researchers, affective factors such as student interest influences how a student selects, processes, and retains information. These cognitive aspects of learning need to be integrated with such affective aspects as student interest (Hidi & Anderson, 1992, p. 215).

This study “begs the question” if events can be structured to elicit text-based interest (e.g., Jose & Brewer, 1984; van Dijk & Kintsch, 1983), task-based interest (e.g., Grolnick & Ryan, 1987; Mitchell, 1993), and knowledge-based interest (Alexander & Murphy, 1998), why can't the events such as Berlyne's collative variables and Bergin's situational factors be integrated into lessons in a learning sequence to elicit situational interest in learners?

CHAPTER THREE

METHODOLOGY

3.1 Introduction

Chapter Three discusses the methodology used to explore situational interest in a tenth grade history class. To investigate situational interest, thirteen lessons in a learning sequence were designed using Berlyne's collative variables. In each of the the lessons, the collative variables were integrated with the situational factors identified in the research of Bergin (1999). This was done to understand if student situational interest would be engaged by specifically designed lessons. Instructional practice was used as the context of the study to better understand the construct of situational in theory in the classroom. Such an understanding of situational interest theory may empower teachers with a theoretical lens by which to develop an instructional learning sequence that elicits situational interest in subject matter. Based on this overarching goal, this chapter provides the methodological frameworks that underlie the aims of this goal. The rationale of the design and methodology of this study are discussed in the following six sections: first the rationale of the methodology; second, a discussion of the inception of this study that provides an understanding as to why this research was pursued is proffered in the form of a narrative; third, the context is described; fourth, the research methods and procedures are detailed for each research question; fifth, the critical attributes of the conception of the curriculum are discussed; and finally, the issues related to the reliability and validity of the grounded theory tradition.

3.2 Methodological Framework: A Grounded Theory Study

To argue why the research goals, objectives, and questions need to be explored through a qualitative lens, this section will lay out the reasoning as to why the grounded theory tradition

was best suited for this study. Although this study used grounded theory methodology, a quantitative examination of the student test scores pre and during the study was also investigated. This was done to submit quantifiable data of cognitive performance before and during the learning sequence that was designed to elicit situational interest. The quantitative research aim was to provide for more triangulation and to determine if significant gains were made in test performance under the learning sequence that were designed with the collative variables and the situational factors. Hence, this study used a mixed-methods approach to answer the research questions posed in this study. The selection and the design of the methodology of this study are predicated on the arguments submitted by Julianne C. Turner in the chapter *Using Context to Enrich and Challenge Motivational Theory* (2001).

Turner justifies a mixed-method approach by viewing such triangulation as a more meaningful lens to answer important questions in research. Although these two methods come from two distinct intellectual traditions—an individual versus a social construction of reality, Turner draws from the work of Tashakkori and Teddie (1998) to establish the point that social scientists are taking a “pragmatic” perspective based on “what works” (2001, p.100).

Turner justifies the merits of a mixed-methods approach by pointing to several noteworthy perspectives as to why a mixed-method approach is the most valuable methodology in affective research. First, she argues that inductive and deductive methods are complementary in that the “... strengths of one offsets the weaknesses of the other” (p.100). Next, she adds that only qualitative data has the ability to answer “how” the affective response is constructed in the setting; whereas, the quantitative method offers the opportunity to use a theoretical orientation to answer the “what” about the affective variable—thus, allowing for generalization. Turner defends that when these two methods are in concert with one another that it provides a venue for

rich research where “...one method informs the other” (2001, p.100). Finally, she again turns to the work of Tashakkori and Teddie (1998) to claim that to answer the research questions about “what” and “how and why” about affective responses that the mixed-method approach is the most powerful methodology because such methodology has the ability to present valuable information that allows for meaningful conversation with each other (2001, p.100). With the power of such triangulation in mind, the quantitative facet was included; however, this is a grounded theory study.

To accomplish the research goals, achieve the objectives, and answer the research questions, a grounded theory methodology was chosen as valid methodology to accomplish the aims of this research for four reasons. First, this study believes scientific truth is not an independent external reality (Suddaby, 2006). Second, this study believes that a systematic collection and analysis of data has the ability to develop theory that would reflect the interpersonal realities of actors in a social setting (Glaser & Strauss, 1967). Third, the purpose of grounded theory is to posit an understanding about patterned relationships between the social actors and the interactive activity that constructed the reality of the social setting and to make statements about how the actors interpret reality (Glaser & Strauss, 1967); hence, it was the best research methodology to explore situational interest in a tenth grade history class. Fourth, grounded theory methodology is a creative and open interpretive process (Glaser, 1978). This tenet of the grounded theory tradition allows the researcher to embrace interpreting data through narrative reflection or journal writing to construct support of the evidence in this research. This is a practice passionately exercised in this study. For these reasons, a grounded theory methodology was chosen for this research.

As stated in chapters one and two, researchers are suggesting that more qualitative and quantitative research is needed regarding instructional practice that will foster and facilitate the increase of situational interest (Hidi & Harackiewicz, 2000; Research report, http://www.regard.ac.uk/research_findings/R000223809/report.pdf; Burke; 1995). Hidi and her colleagues argue that educational practice that would elicit situational interest could play an important contribution to the motivation of academically unmotivated children and could possibly elicit stimulation and challenge in the classroom (Hidi, 1990; Hidi & Harackiewicz, 2000). In keeping with this need, this study asked, “How do the teacher and students in a sophomore history class experience situational interest when the teacher uses *collative variables* and *situational factors* in the design of a learning sequence? Lofland and Lofland (1984) suggest explaining the study’s inception in the methods section of the study (in Miles and Huberman, 1984); thus, to address why this researcher felt an urgency to answer the call for such research, it is important to understand the researcher and the inception of this study.

3.2.1 Inception of This Study and the Researcher

To tell this research story, it is critical the study’s inception is included in this dissertation to explain where the seed of this study was planted.

The research question for this study has its early beginnings in my early childhood. Up until 11th grade, I was the product of a Catholic education. Throughout my life, I have attended three different Catholic schools. As such, I was raised on “Think and Do” books or a drill and practice view of the learning experience. It was in the first year of my education that I came to the realization that I was more interested in standing on a toilet seat, swinging out from the top bar in the bathroom stall, watching my uniform skirt form a plaid parachute, and hunkering in for an exciting landing than I was working in my “Think and Do” book. Such kinesthetic events

began to consume my every attention, and it was this very distraction that had convinced me that I should not have to suffer through the boredom that was plaguing this monotonous learning environment (By the way, my impressive gymnastic feats were ended when a nun, whose stature at the time was formidable, came into the restroom and caught me flying out of the stall in midair. As usual, I was smacked upside the head and directed sternly back to class).

As my elementary years rolled along, my hyperactivity continued to lead my attention to every event in the environment that had ever so slightly deviated from this parent-treasured monastic chamber of drill and practice. Whether it was raising my hand to complain to my second grade teacher, Sister Bernadette, that Shelly P. had messed her pants again to constantly wondering if the perpetual sour look on Sister’s face was caused by that stiff white cardboard that was hugging her aging cheeks as if they were pressed together into some old small ill-shaped window—whatever it was that was commanding my attention, at the end of the day, I had every unusual or surprising event memorized and ready to share in exaggerated story form with my friends. Despite my pleas to my parents that I needed to be freed from this abuse, they were convinced that this was the best place for me to attend to my studies. As such, one year led to another—just a different colored cover on the “Think and Do” books and more nuns with squished-up faces who beat me up for attending to the events that shouldn’t be holding my interest.

My middle school experience also found me a fan of mischief and chronically distracted from my studies. In seventh grade, we had a nun who was a Goliath of person as our teacher. The children before us had nicknamed her “Flipper.” There is no other way to put it—she was old and mean. Because no other child wanted to get near this woman, my classmates had voted me to be class president as a cruel joke. I had talked to Father about it in the confessional to try to get

his perspective on the matter, but he told me to accept my assignment. He went on to say that I should to try to use my new position to try to warm up to Sister Claudia. I loved Father, but I thought to myself, “C’mon, Father! You’ve got to be kidding! We’re talking about Flipper here!” I left the confessional, interpreting our little chat as one of those conversations that was saying “Please hear what I’m not saying”—in other words, “Do your job but steer clear!”

The point is this that on a daily basis Sister Claudia bounced kids around like they were newly inflated basketballs. When she had lunch duty, she would charge into the boys’ bathroom and start hurling those small young boys out of the bathroom door as if they were rag dolls. As the little guys were sent spinning like tops through the bathroom door, a booming “Quit dawdling!” would resound throughout the entire cafeteria. The boys, who were tipped over and scattered about like scattered chess pieces, would try to compose themselves. Consumed with embarrassment, they would get to their feet while trying to zip up their pants, and then they would charge out the playground door—a sanctuary where they were able, once again, to restore their pride. When this ritual was over, in the name of all of the starving children in Africa, Sister Claudia would then turn to the garbage cans. Digging through the sea of brown bags, she would pick out every brown bag that still had food in it. If the bag had a child’s name on it, she would go retrieve the student from the playground and make them come in and finish his/her lunch.

This is where I come in—after a few times of being pulled into the school by my hair, pushed to a cafeteria table, seated violently in front of my crumpled lunch bag, and forced to eat something that it should have been obvious to that old nun that I hated, I decided that I wasn’t going to take it anymore! Although it wasn’t exactly a *Sophie’s Choice* type of decision, it was one that I had I thought long and hard about—further, I knew that I would have to answer for it in the confessional. Yes. You guessed it—probably because it would’ve been your only recourse.

I started putting other children's names on my lunch bag. I must confess that hearing the other children scream "But Sister, this isn't my lunch" as they were being dragged back into the lunchroom did provide me with many moments of entertainment. Looking back, however, it was purely a Darwinian move. It was either me or them. I am certainly not proud of my actions or those poor children who had to consume those half-eaten tuna dogs, but in a qualitative study one must tell the truth even if it hurts.

In my ninth grade year, I had joined Future Teachers of America. It was obvious when I showed up that I didn't fit the profile of what Sister Loretto thought was a "Future Teacher." My reputation for creating fun wherever I went had preceded me. "But Christine—you are currently being punished for sitting and making faces to the crowd as you sat on the showroom toilet in the bathroom display window at Montgomery Wards. The store authorities have banned our students from the store due to your behavior. What kind of teacher would do such a thing?" "It's just what the profession needs, Sister!" I argued. Although she wasn't buying it, she perceived it as an act of mercy to allow me to stay. I had to vow that my mischief would come to an end to remain a member. As I listened to my peers at the weekly meetings, it quickly dawned on me that they were all just a bunch of nuns without the habits, who would be teaching their classes using the same bad habits. "For God's sake!" I exclaimed. "This has to stop!" I had resolved at that moment that if I couldn't make learning more of a fun and interesting experience for children that I would leave the profession.

When I was about to enter my junior year of high school, all of the small Catholic high schools had closed and all of the children were sent to one large Catholic high school. Due to cost, my parents allowed me to attend a large class "A" public school in the heart of the city. Finally! I would experience learning that was fun and interesting. Wrong! Although the

opportunities for distraction were much more engaging than my parochial experience, all of my teachers, just as they had been in the Catholic school, also appeared as if they were suffering from some undisclosed pain when they delivered each lesson. They did not make us feel that they were happy to be there with us--more worksheets and more mindlessness. I was bored.

For me, the great thing about public schooling is what Eisner has coined as the *null curriculum*. That was the curriculum that had occurred beyond the school doors. I fell in with a group of students who loved to read and were heavily into subversive activities. These students not only read books, but we met once a month to discuss them. We read Camus, Hesse, Kafka, Gibran, Rogers, Salinger, Vonnegut, Cummings, and Ayn Rand— just to name a few. It was also here that I had read *Summerhill* by A.S. Neill. In my mind, that was where I should've gone to school. As far as the public school that I was attending, more education was happening beyond the walls of the classroom. My boredom had also led me to activities that, in the minds of many, a teacher of the future should not have been participating in—writer for an underground newspaper, kicked out of school for a week for participating in a sit-in, suspended for spraying alcohol on kids' shoes in chemistry and lighting their shoes on fire--Sister Loretto was right. Teaching was a calling and how dare that I be called. Still, I was on a mission.

College would also present a challenge. Up to this point, I have failed to mention that I have an insatiable curiosity about life, that I love to learn, and that my endless questioning annoys my friends and even the most patient of sages who have had me as a student. So much so that in my doctoral program a fellow student, Elsa, pinned me against the wall and barked "If you ask one more question in the last fifteen minutes of class, you're going to have to answer to the rest of us!"

I quickly replied with a “Whoa! You guys are a little testy for doctoral students in Curriculum and Instruction. You’d think that you would appreciate such inquiry.”

“We don’t,” She mumbled and gave me “the look.” To this day, I believe the other students in my class would’ve been more gracious about my inquiry if they hadn’t had to drive so far to get home from class. By the way, Elsa did like me. It was just her humorous way of letting me put my finger on the pulse of the class’s feelings. I have a hard time with that sometimes. Nevertheless, my incessant questioning has not always been an endearing characteristic in my personality.

It was this very demon that disguises itself as my passion for inquiry that almost ended my teaching career in the school of education in my undergraduate experience. I had written a treatise about one of my education professor’s ability to teach. He took it that I was challenging his competence. I took it as honesty. Since then, I have discovered that no matter how much the scholars of higher academia tell you to “be critical” that it is only truly welcome if it is not about them. He told me that such intimidating behavior did not belong around children, and that he wasn’t going to allow me to teach. I was stunned. I raced to the department chairperson, who had faith in my teaching abilities, and we sat on the floor of her office and I sobbed. If it wasn’t for her, I would not be writing this today.

She went and talked to the professor, who was standing firm that I did not belong in the classroom. For me to be able to teach, a deal was to be struck. I had to promise that I would not ask any more questions in his class and instead of one placement in my observation practicum, I would have to serve under several teachers who would all have to agree that I was not threatening to children. Finally, I would have to be placed with the most conservative teacher in the city, who was notorious for failing people in their student teaching experience.

Matters were made worse when I wrote a poem entitled “The Milkweed” on my student teaching application rather than a narrative autobiography. Although the poem was my story, it was viewed as a radical departure from what was usually done on the application. All that is not well, however, often ends well. All of the teachers gave me outstanding recommendations, and I became a teacher. Even Mr. A, “Mr. Conservative”, fell in love with my wit and passion as I did his.

Moral of the Story

God, my aunt, my father, and Dr. L. helped me overcome the caustic and arrogant nature that had afflicted my youth. They helped me to understand what it was like to be on the receiving end of my actions. I am a different person now. I understand the importance of affect and its role in cognition. When my chair suggested that I follow his work in affect, I responded “Dr. K., my work will be in affect, but I have to go my own way.” That’s when I went and found Berlyne. His work spoke to me. Could these collative variables be the answer for engaging the interest of those students who are restless and bored— people like me whose focus has been being attentive to every event that has deviated from my habituated state?

My own learning experience has called me to this research. I am a white fifty-five year old teacher who has been teaching for thirty years. With humility, I share that I have been recognized as a “Great Teacher” on a district-wide, a county-wide, and a state level.

These, however, have not been the trophies of my career. The laughter of children and the capturing of their interest has always been the prize for me. Moreover, watching children love to learn and knowing that I have played an important part in that is what drives me. The secret to my success lies in the fact that I have never stopped being that child in my own classroom who is causing mischief. Only now, I do it with content. I don’t teach the “Aha!” moments because the

“Uh-oh” moments are more interesting. Sister Loretto, the best teachers are not always the ones that did the right thing. It is in “Yin” and it is in “Yang” that the whole is achieved.

3.3 School Setting

The study took place in a tenth grade history class that was located in a Class “B” high school in mid-Michigan’s thumb. In study, I worked with one 36 year old female social studies teacher, who has 15 years of teaching experience for seven weeks. Although it was a six week qualitative study, in the seventh week, Mary and I met for a summative interview and to examine a learning sequence that Mary had designed after the completion of the study.

I selected Mary (pseudonym) because she teaches 10th grade social studies in the same school where I teach. Mary’s eagerness to learn new ways of motivating interest in her 10th grade social studies classroom made her an excellent candidate for this study. Because we have developed a mutual trusting relationship, Mary was open to a critical dialogue with me and to a mentorship in the design of learning sequences that used Berlyne’s collative variables.

The social setting of the qualitative study was Mary and her second hour sophomore history class. The class was comprised of 15 boys and 6 girls. Three of these students were learning disabled, one was emotionally impaired, and four had been diagnosed with ADD or AHDD. Although there were 22 in the class, the student who had a junior class standing and had been retaking the class was left out of the study.

3.4 The Role of the Researcher

The researcher’s role in this study may be viewed from three categories: involvement; data collection; and data interpretation. From the perspective of involvement, the researcher mentored and designed a learning sequence with Mary; observed and took field notes of the videos of the lessons in the learning sequence; conducted student surveys and consensograms,

conducted on-going analysis of the data; and conducted interviews with Mary and the students. From the data collection perspective, the researcher created timelines and collected data from the following sources: video text from the learning sequences; audio recorded interviews with Mary and students; student questionnaires; consensograms; student surveys; test scores; and peer evaluations. From the role of data interpretation, the researcher conducted “constant comparative” analysis throughout the study, which included open, axial, and selective coding and theory building.

The following table represents the stages in this study’s grounded theory method and the data that was collected (see table 3.1 on the following page).

Table 3.1: Stages of the Grounded Theory Study

Stage in the study	Grounded Theory Stage
<p>Preliminary Stage</p> <p>Involving</p> <p>Designing learning sequences with Mary. Watching and taking Notes of learning sequences. Data Collection Student Interest Questionnaire Consensograms Interviews with Mary and students.</p>	<p>Open Coding begins of the data and is ongoing until the selective coding stage. Color coding of the text, memo writing, and interpretations begin and are used to identify categories, sub-categories, and variables.</p> <p>Axial coding begins. Adjustments are made in designing learning sequences.</p>
<p>Study is Final- Data Collection Stage</p> <p>Data Collection Methods</p> <ul style="list-style-type: none"> • Video text from learning sequences • Audio recorded interviews with Mary and students • Student questionnaire • Consensograms • Student surveys • Peer evaluation 	<p>Axial Coding continues to identify causal relationships.</p> <p>Selective Coding begins</p> <ul style="list-style-type: none"> • From the color coding, memos and interpretation of data in journal assign the values to variables of the phenomenon from word frequency, and reoccurring perceptions. • Identify emerging themes and categories. • Use multiple collection methods to create synergistic view of evidence. • Generate a theory. • Validate the theory with the data.
<p>Study is Final-Data Analysis stage</p>	<p>Selective Coding Continues</p> <p>Grounding the theory</p> <ul style="list-style-type: none"> • Saturated categories are used to identify a main theme. • A theory emerges. • Narrative is written. • Theory is proffered. • Theory is validated from the data.

The table illustrates the stages of grounded theory argued in the work of Strauss and Corbin (1990; 1994). To provide teachers with a rich description of lessons designed with

collative variables and *situational variables* and to build theory with classroom evidence, a grounded theory study was the best methodology suited for this study.

3.5 Data Collection and Analytical Methods, Strategies, Tools, and Procedures

This section provides detailed information regarding how the data was collected and analyzed to answer each research question in the study. To meaningfully experience the findings in this study, this study was told metaphorically from the perspective of four seasons. Multiple sources of data were utilized in triangulation. Details of the rationale and the data collection for each research question follows:

Research Question 1: Winter: The bare beginnings—what are Mary’s pedagogical dispositions toward how a learning sequence on *Politics and Life in the Roaring Twenties* should be designed and implemented with a focus on integrating Berlyne’s collative variables and Bergin’s situational factors to engage situational interest?

Rationale for Chapter Four: Three shortcomings in existing practices that are supported in the literature strongly suggest why this chapter was pursued. First, there is little research aimed at promoting situational interest through educational interventions (Hidi & Harackiewicz, 2000). Secondly, the rate of boredom is highest in classes that are academic and abstract in nature, such as social studies, science, foreign language, and English (Healy, 1984; Larson and Richards, 1991). Third, teachers neglect to create environments that motivate situational interest in the subject matter (Hidi & Harackiewicz , 2000). The goal was to determine if a teacher’s pedagogical dispositions and inclinations toward creating lessons to promote situational interest would provide an understanding of why lesson design is not addressing student boredom or disengagement by eliciting situational interest. Further, this chapter sought to understand if the

mentoring of a teacher's pedagogical dispositions and inclinations is a critical attribute to be considered in a construct of situational interest for lesson design.

Data Gathering in Winter

To answer how a teacher's pedagogical disposition and inclinations influence designing lessons with Berlyne's collative variables and Bergin's situational factors, planning sessions and mentoring were conducted with Mary in the preliminary and initial stages of the study. The planning sessions occurred in one hour time slots, before or after school. These sessions were mutually agreed upon for the first week of the study. Each of the planning sessions was audio recorded, and then typed into transcripts of the sessions. Analysis of the data focused on (a) the audio recordings of the planning sessions; (b) field notes recorded after each session; (c) and journal entries that recorded my perceptions of Mary's pedagogical disposition and inclinations.

Data Analysis in Winter

Throughout data analysis the procedures for analysis were adopted from Corbin and Strauss (1990). It consisted of open, axial, and selective coding. Open coding was used to develop categories of information from the perceptions of Mary, the students, and the researcher throughout the learning sequence. Axial coding was used to interconnect the categories as they related to building a construct of situational interest in lesson design, and selective coding was used to build a *story* that connects the categories. A set of theoretical propositions were also rendered from the evidence in the story (Strauss & Corbin, 1990).

In the *open coding* stage the researcher examined the audio and video transcripts, field notes, student surveys, and journal articles for salient categories that were grounded in the text of the data. Next, using a "constant comparative" approach, the researcher identified *properties* or

sub-categories of the categories. This was done through data reduction. The researcher then *dimensionalized* the properties and displayed it on a concept map (Strauss & Corbin, 1990).

Next, the researcher conducted *axial coding* by identifying the *causal conditions* interrelationships among the variables, factors, and dimensions that were supported in the data as contributing to the construct of situational interest. Finally, in a coding paradigm, interrelationships of the patterns supported in the evidence were established. Such patterns contributed to theory building regarding lesson design that engages student situational interest. From this paradigm, a theoretical construct of designing lessons to promote situational interest in a tenth grade history class was built (Strauss & Corbin, 1990).

Analysis of the Planning Sessions with Mary

In open and axial coding, the transcripts of the recordings of the planning sessions with Mary, the field notes were taken after the sessions, and the journal entries were read and color coded. In selective coding, patterns and relationships were identified. Data reduction occurred daily, weekly, and over the course of two years. The frequencies of the emerging themes and categories were charted on concept maps to generate claims and to make to practical arguments from the evidence. Drawing from the claim made by Suddaby (2006), that induction and deduction play a role in the grounded theory interpretive process, interpretations, hunches, and nonverbal expressions were also added in support of consistent patterns of practical arguments. The goal was to determine if there was grounded evidence to support the practical argument that a teacher's pedagogical disposition and inclination in designing lessons with the collative variables and situational factors is an important factor in the construct of situational interest in lesson design. Further, did the findings shed an understanding as to why teachers are neglecting

to design learning environments that motivate situational interest in the subject matter (Hidi, 2000)?

Research Question 2: Spring in the Old Neighborhood: Springing of Situational Interest—how did the teacher’s perceptions of situational interest grow as a result of the specially designed lesson sequence that incorporated Berlyne’s collative variables and Bergin’s situational factors?

Rationale for Chapter Five: From a formative and summative analysis of the data that emerged from the interactions, events, and perceptions of each of the lessons, Chapter Five sought to understand if of the collative variables (Berlyne, 1960, 1971, 1974), Bergin’s situational factors and the dimensions identified in the work of Chen, Darst, & Pangrazi (1999) would be grounded in common patterns supported in the evidence from the lessons.

Chapter Five sought to further understand if the *collative variables*, the *situational factors*, and the *dimensions* that were grounded in the evidence would support Deci’s (1992) three person-activity categories that are premised on the self-determination theory. Deci (1992) believes that when a person experiences situational interest, his behavior is characterized by *concentration* and *engagement*, because there is a match between the people’s needs, desires, and capacities, and the characteristics of the activity. Deci (1992) asserts that when children are free from biological urges that they focus their attention on activities that interest them. He contends that situational interest cannot be conceptualized or measured by a single concept. He suggests three person-activity categories that should be considered: (a) the person-activity feature component, (b) the experiential component, and (c) the dispositional component. Thus, the starting point for the analysis of situational interest in self-determination theory is this relationship between person and activity in a social setting. Studying situational interest from the relationship of person and activity in a social setting, the aim of the findings in this chapter was

to understand how multiple theories of the phenomenon of situational interest corroborated or disconfirmed what was found in this study (Ary, Jacobs, & Raziavieh, 2002). This was done lesson-by-lesson and with the summative findings from the learning sequence.

In summary, Chapter Five attempts to understand if using Berlyne's collative variables (extrinsic motivation) and situational and individual (intrinsic) factors to create a lesson sequence will catch/trigger student situational interest. Hence, the goal was to construct a theoretical conceptualization of what variables and situational and affective factors arouse students to action in situational interest so that intrinsic motivation may be experienced (Hidi, 2000).

Data Gathering for Spring

To answer the second research question, data was collected and triangulated from seven sources: transcripts of audio-recordings of planning conversations between Mary and me ; video-recordings of classroom events and interactions; audio-recordings of six weeks of twice per week "Think-Aloud" sessions of our conversations and interpretations about Mary's decisions and actions of her lessons; Students' "Ticket-Out-of-the-Door surveys ; audio-recordings of My Interviews with Students about their sense-making of the lesson sequences; my journal entries; and consensograms.

Video Recordings of Lessons and Audio recordings of Planning Sessions and Think Aloud Sessions

Despite Glaser's recommendation against recording and taking notes during interviews or data collection sessions (1998), the conversation of our lesson planning was audio recorded, and each of the learning sequences that had been designed according to the variables was video recorded, as the lesson was delivered to the students. This was done to capture the classroom events and interactions that were influenced by the specifically designed lessons to promote

situational interest. This was also done in order to document how Mary had been mentored by me (the researcher) and to create the context in which she had created the design of the learning sequence according to Berlyne's collative variables and Bergin's situational variables. Further, the Think Aloud Sessions, conducted twice a week, were audio recorded to allow for Mary to make connections between the excerpts in the video from the classroom events and interactions and the critical attributes that she experienced as being to student situational interest.

Under my mentorship, Mary and I created thirteen lessons in a six week learning sequence that threaded Berlyne's variables and Bergin's situational factors throughout each of the lessons. Each lesson was specifically designed to observe if Berlyne's collative variables and Bergin's situational factors would influence student situational interest. One lesson was prepared by Mary without my mentoring and is discussed in Chapter Seven. The planning sessions occurred one hour before or after school for two or three days each week. Then, twice a week, after I had selected out excerpts from the audio/ video recorded text of the specifically designed activities that showed the students' interactions, I posed the following questions to Mary to garner her experiences in the lessons: 1) What sense do you make of this excerpt?; 2) What main issues or themes strike you?; 3) What cues did you observe that provide you with evidence or lack of evidence that students are interested?; 4) Did any specific aspect of the lesson elicit more or less evidence of situational interest? Why do you believe this is so? ; and, 5) Does any phenomena that we have not discussed strike you as being salient, interesting, or illuminating? These questions would be used in the "constant comparative" approach in each lesson as well as throughout the learning sequence to make connections between the critical attributes of the specifically designed lessons and student situational interest.

The thirteen hours were committed to the weekly Think Aloud Sessions to reflect on the excerpts from the video and the twelve hours committed to the planning sessions to design the lessons both combined into approximately twenty five hours of individual interview recordings and collection of field notes.

Ticket Out the Door Surveys

Two Ticket-Out- the- Door Surveys were given to the students before they exited the classroom on two different occasions. Drawing from the work of Bergin (1999), the first survey was given to the students in the first week of the study. It was to determine the situational factors that the students deemed as contributing to their situational interest. Regarding influencing the likelihood that situational interest will be experienced, the claims of Bergin (1999) and the claims by Schraw, Flowerday, and Lehman (2001) were used for pattern matching for theoretical adequacy (Ary, Jacobs, & Raziavieh, 2002). These researchers argue that lesson designs that include the factors illustrated in the following table promote situational interest (see Table 3.2).

Table 3.2: Factors Identified To Promote Situational Interest in Lessons

Bergin (1999) argues that if individual factors and situational factors are integrated into a lesson that more situational interest will occur.		Schraw, Flowerday, and Lehman (2001) identified three ways to increase situational interest in the classroom.
Individual Factors	Situational Factors	Situational Factors
<ol style="list-style-type: none"> 1. Belongingness 2. Emotion 3. Competence 4. Utility-Goal 5. Relevance 6. Background Knowledge (1999). 	<ol style="list-style-type: none"> 1. Hands-on 2. Discrepancy 3. Novelty 4. Food 5. Social Interaction 6. Modeling 7. Games 8. Puzzles 9. Content 10. Biophilia 11. Fantasy 12. Humor 13. Narrative (1999). 	<ol style="list-style-type: none"> 1. Selecting well-organized texts that enhance interest. 2. Offer meaningful choices to students. 3. Providing the sufficient background knowledge that will be needed to understand the content (2001).

To discover what situational factors would emerge by the students as “interesting” this study would build on the work of Bergin (1999) and Schraw, Flowerday, and Lehman (2001). Although five questions were asked, the following four questions were asked in the first Ticket-Out-the-Door- Survey in the first week of the study to determine which situational factors the students deemed as “interesting”: (1) What parts of a learning sequence are most appealing to you?; (2) What types of activities make learning fun for you?; (3) Give examples of activities in class that hold your attention; and(4) If you were a teacher, what would you do to make the class

more interesting? The following table illustrates the situational factors identified by the students in the survey.

Table 3.3: Study Group's Situational Factors that Influence Situational Interest

Bergin's List of Situational Factors (1999)	This Study Group's List Of Situational Factors
1. Hands-on 2. Discrepancy 3. Novelty 4. Food 5. Social interaction 6. Modeling 7. Games 8. Puzzles 9. Content 10. Biophilia 11. Fantasy 12. Humor 13. Narrative (1999).	1. Movement 2. Hands-on 3. Novel activities 4. Discrepancy 5. Group work/ Social interaction 6. Games 7. Humor 8. Teacher Enthusiasm 9. Interest surveys or inventories 10. Discussions 11. Movies 12. Music

To enhance greater situational interest, Mary and I added the collative variables to foster perturbation or disturbance— *surprise, complexity, ambiguity, novelty, change, and indistinctness*—to the situational factors identified by Bergin to discover if these situational variables influenced the students' situational interest. Mary and I would also draw from the list of situational factors proffered by the students to design the lessons. This was done for pattern-matching in situational interest theory. The second Out-the Door Survey asked the students to identify the activities that *caught/triggered* and *held* their *situational interest* the most in the learning sequence. The students were also asked to provide the features of the activity that contributed to holding their situational interest. The surveys were conducted with the students at the end of the assembly line activity. This was done to compare how the students experienced

situational interest in the surveys with the findings that were emerging from the evidence in the student interviews and the consensograms.

Student Interviews

To discover if adding Berlyne's collative variables and Bergin's ssituational factors would influence the students' situational interest, all 21 students with exception of the junior in the class were interviewed. The emotionally impaired student froze during the interview. I quickly let him know that it was okay not to participate and walked him back to class; this reduced the data from student interviews to 20. Starting with the second week of the study, four students were interviewed each week for four weeks to undertake constant comparison of the data to interpret what was emerging. Each interview lasted approximately a half of an hour to forty-five minutes. Pseudonyms for the students are used in the study to protect student privacy. Color coding of the text and writing memos on Post-its were used in constant comparison and to adjust the learning sequences. Concept mapping was used to display data and to draw relationships. Typed journal entries recorded my observations and interpretations.

Through a four-stage validation process and analysis, Chen, Darst, and Pangrazi (1999) established five *dimensions* of situational interest that were organized around Deci's multidimensional construct: Novelty, Challenge, Exploration Intention, Instant Enjoyment, and Attention Demand. From this validation process, a 24-item scale was developed and modified. The study established that the items on the scale had the capability of discerning *high* response versus *low* response activities. Further, the scale demonstrated acceptable internal consistency. From these findings, Chen, Darst, and Pangrazi (1999) argue that their scale is an acceptable measure of student situational interest across the five areas. For this reason, an open-ended

version of the Situational Interest Scale was used in the qualitative study as a framework for the student interviews

To enrich the insight of the evidence that confirms or disconfirms whether or not the students experienced situational interest over the six week unit, the questions on the Situational Interest Scale (Chen et al, 1999) were modified to an open-ended format and used in the student interviews as a guide for questioning. The purpose of using the Open-ended Situational Interest Scale was two-fold. First, it was the researcher's intent to seek to understand if the categories that emerged as defining situational interest by Chen, Darst, and Pangrazzi (1999) would also emerge in this study. This was done for pattern matching to support consistent claims in situational interest theory. Second, this study sought to discover if more specific situational interest factors would emerge beyond those claimed in the work of Bergin (1999) and Chen, Darst, and Pangrazi (1999), when using Berlyne's collative variables are to design a learning sequence. The results of Chen, Darst, and Pangrazi's (1999) reliability study suggested that the scale would generate reliable data for examining the students' experience of situational interest in both conceptual and participatory learning tasks (1999). The goal was to explore if the dimensions of situational interest identified by Chen, Darst, and Pangrazi (1999) in a quantitative investigation would also emerge in a study grounded through a qualitative lens. The Open-ended Situational Interest Scale retrieved the student experiences with situational interest in each of the lessons. After analysis of the questions in the student interviews, the findings are submitted as evidence for the individual lessons in Chapter Five, and from a summative perspective, the findings are viewed collectively in Chapter Six. The part-to-whole-lens and the whole-to-part approach is done to compare for consistency, establish relationships, and pattern match with claims made in situational interest literature. The following diagram is the Open-ended

Situational Scale used in the student interviews. It was adapted from the work of Chen, Darst, and Pangrazi (1999) (see Table 3.4 on following page)

Table 3.4: Open-ended Situational Interest Scale**Open-ended Situational Interest Scale**

Grade _____ Age _____ Male _____ Female _____

1. Were the lessons over the past six weeks exciting? How would you compare/contrast the lessons to the lessons before the six week unit?
2. Were the lessons complex? If so, cite the lesson and provide your reaction. If not, cite a lesson and explain your reaction.
3. Has what you have been learning been complicated or too simplified? Has this attracted or detracted your attention from the lessons. Provide examples in your answer.
4. What learning provided your highest attention? What were the characteristics of a lesson that commanded your attention? What were some aspects of a lesson that detracted from your attention?
5. Was learning over the past six weeks fun for you? If so, explain what made it fun. If not, explain what made it boring?
6. Was it easy to pay attention to what you have learned in the last six weeks? Explain why or why not.
7. Did the way the lessons were presented make you want to find out more about the topic? Provide examples.
8. Would you rate any activity in any of the lessons as exceptional?
9. Over the past six weeks, what parts of the learning were most appealing to you?
10. Was there anything in the way any of the lessons were presented that made you want to analyze and have a better handle on what you have been learning. If so, explain what things in one of the lessons made you want to feel this?
11. Over the past six weeks, has the learning been fun and made you want to try? Explain.
12. Has the learning over the past six weeks been new-fashioned? What made it new-fashioned to you?
13. Have you enjoyed learning over the past six weeks? Tell what you have enjoyed most?
14. Over the past six weeks, what pieces of learning demanded your focus. Describe these pieces.
15. Has what you have learned in the lessons in this unit demanded your concentration? Give an example of when you had to concentrate.
16. Is this a true statement "What we have been learning has been interesting." Explain why or why not.
17. Which statement is most correct: The activities caught my situational interest; The activities did not catch my interest; The activities caught and held my interest; Some activities caught and held my interest; The activities did not catch or hold my interest.
18. Was what you have been doing in this unit been hard for you? to do or too demanding? Explain.
19. Did you ever want more details of how to do what you were learning? When?

The goal of using this open-ended version was to explore the consistency in the extant literature when using Berlyne's collative variables and Bergin's situational and affective factors to design lessons in a learning sequence to see if the five dimensions identified by Chen, Darst, and Pangrazzi (1999) would emerge.

Consensograms

Consensograms were used throughout the study to inform and assist in making adjustments in the learning sequences. They were also used to corroborate the pattern development in the triangulation of the evidence from other data sources. A consensogram is a tactile activity where children move around the room responding to questions that were written on laminated poster board. For instance, on one board, I would write the statement "What we are learning is interesting for me to do." At the bottom of the poster board, it has a continuum from "Agree" to "Undecided" to "Disagree." The students move around the classroom answering each of the questions. Throughout each week, selected questions on the Open-ended Situational Interest Scale were used to gain student feedback in each of the lessons and to make adjustments to future lessons. As the students place a mark under which part of the continuum that they "Agree" or "Disagree" with, the consensogram graphs the students' perceptions of each question. The answers to the questions provided data as to how the students perceived the learning sequence. At least once or twice a week, consensograms were used as a means of data collection in the individual lessons.

Field Notes and Journal Entries

Field notes to assist in logging immediate observations were jotted down throughout the six weeks. The field notes served as the protocol used to create my journal entries. My journal

entries were narratives that reflected on my perceptions and observations to the data that was emerging in each of the lessons to understand if my interpretations were matching patterns in comparative analysis.

All of the means of data collection in this chapter was guided by theoretical sampling, which systematically moved from open to relational to discriminate sampling. The sampling procedures were derived from three overlapping processes of analysis: open coding, axial coding, and selective coding.

Data Analysis for Spring

Data Analysis of Planning Sessions and Think Aloud Sessions

The procedure of analysis for the Think Aloud sessions and the planning sessions was the same as the planning session for the first research question. In open and axial coding, the transcripts of the recordings of the planning sessions with Mary, the field notes that were taken after each of the sessions, and my journal entries were all read and color coded in the open coding stage. In selective coding, patterns and relationships were identified. Data reduction occurred daily, weekly, and over the course of two years. The frequencies of the emerging themes, categories, and patterns were charted on concept maps to generate claims and to make practical arguments from the evidence.

Data Analysis of Out the Door Surveys

The results of the surveys were color coded. Frequency tables were composed. Open coding was used to develop categories of information from the experiences of the students established in the data on the student surveys. Axial coding was used to interconnect the categories as they related to the patterns that had emerged in multiple situational theories such as

claimed by Bergin (1999) and Chen, Darst, and Pangrazi (1999). The evidence in the students' data was also used to design future lessons to work toward theoretical adequacy.

Data Analysis of the Student Interviews

Transcripts of the audio recordings of the student interviews were color coded to establish consistent categories. Open coding was used to develop categories of information from the experiences of the students. Axial coding was used to interconnect the categories as they related to building a construct of situational interest in lesson design. In this stage, the researcher identified *properties* or sub-categories of the categories and displayed frequencies on a concept map. Next, the researcher identified the *causal conditions* or interrelationships among the variables, factors, and dimensions that were supported in the data as contributing to the construct of situational interest (Strauss & Corbin, 1990).

Data Analysis of Consensograms

The data from the consensograms was converted into frequency tables. The data was used to provide a synergistic view of the evidence from the multiple sources. Recurring categories in the frequency tables were interrelated with other multiple sources of data. Memos of the discrepancies were also noted. This was done for pattern matching with the claims made in the extant literature and to establish patterns unique to this study.

Research Question Three: Summer: The landscape has finished blooming—What light did the students shed on how situational interest was conceptualized in the implementation of the specially designed lesson sequence?

Rationale for Chapter Six: The Theory of integration of the internal and external factors advanced by Deci and Ryan (1992, 1999) in the self-determination theory is a powerful argument for how the relation between motivation and situational interest should be viewed. Hidi

and Berndorff (1998) suggest that eliciting situational interest in individuals is highly representative of the integration between external and internal factors. More investigations that consider external interventions that promote situational interest may shed light on the cognitive value of this integration. The educational value of such research is that sustained situational interest may incite interest in school tasks where students do not have pre-existing individual interest (Bergin, 1999; Hidi & Harackiewicz, 2000; Mitchell, 1993). The goal of this research question was to further attempt to understand the internal and external factors that influence situational interest in lessons from a whole-to-part lens. This was the second focus of coding and interpreting the findings from the student interviews.

To discern if such integration of external and internal factors was being conceptualized by the perceptions of students in the learning sequence consistently in the pattern development of the categories, the questions used in the student interviews sought to interpret the data from a whole to part lens. It was to understand if the variables, factors, and/ or dimensions that emerged in the data from the lens of *part to whole* perspective in Chapter Five corroborated the pattern development and categories that emerged in a *whole to part* view. If the findings would establish patterns in interpretation, the evidence in the findings would contribute to stronger theoretical adequacy. Further, the internal and external factors that consistently emerged from the evidence from both lens would strengthen an understanding of situational interest in lesson design.

Data Gathering for Summer

To answer the third research question, two data sources were utilized: the student interviews, and the student test scores that demonstrate the students' performance before and during the study.

Student Interviews

To enrich Mary's insight of the evidence that confirms or disconfirms whether or not the students experienced situational interest over the six week unit, the questions on the Situational Interest Scale (Chen et al, 1999) were focused on a whole-to-part approach for this research question. The purpose of using the data from Open-ended Situational Interest Scale to was to interpret the student perspectives from two lenses, part-to-whole and whole-to-part. This was done to seek to understand if the categories that had emerged as defining situational interest would be corroborated in pattern development. The findings of this aspect of the data generation would also be shared with Mary.

Student Test Scores From Mary's Grade Book

To understand quantitative gains in student performance over the learning sequence, the students' individual and mean scores from three tests in Mary's computerized record book were examined. The test scores before and during the study were explored. The test the students had taken immediately before the study was quantitatively compared and contrasted to two tests that the students had taken during the study. This was done to understand if cognitive performance on tests had been influenced by the learning sequence that used Berlyne's *collative variables* and Bergin's *situational factors*. To suggest internal validity of the data, Mary used the same combination of evaluation techniques on her tests that she had used prior to the study: a combination of multiple choice questions and essay questions were used in each test, only the number of questions on the test were different from in the baseline data.

Data Analysis for Summer

To answer this research question, frequency tables were utilized to display a visual understanding of the variables, factors, and or dimensions that were grounded from the whole-to-part lens in the student interviews. Also, quantitative data from the students test scores was

submitted to seek to explore if there was a difference in cognitive performance when Berlyne's *collative variables* and Bergin's *situational factors* were used to create lessons that foster situational interest. The evidence from the frequency tables and the students' test scores are discussed in Chapter Six.

Analysis of Student Interviews

As with the last research question, the data from the student interviews were sorted into two groups: the data that addressed the individual lessons in the learning sequences and the data that addressed the learning sequence collectively. For this research question, the focus was the data from the student interviews that addressed the learning sequence from a collective lens. The goal was to seek to discover if the variables, factors, and dimensions that emerged from that data corroborated a part-to-whole student perspective to support a construct of situational interest in lesson design. Grounded theory strategies were also used to reduce the data from the student interviews in this research question. This was done to establish patterns and relationships in the data and to sort out findings in the student interviews unique to the collective lens. Pattern matching with the claims made in the extant literature was also done to examine consistency and differences in the findings.

Analysis of the Test Scores

Differences in the mean over the three test scores are cited and the possible cognitive implications are discussed. The test scores of the individual students were also compared and contrasted over the three tests. The students' experiences with test taking during the study were color coded and the frequency in categories was charted on concept maps. The findings of the students' test scores and representative excerpts from the student interviews are discussed in Chapter Six.

Research Question Four: Fall: A season of changing colors—how did the investigation of situational interest change Mary’s perceptions of how to design lessons to engage situational interest?

Rationale: The dominant culture in schooling is that of copying notes and obedience, where the intellectual activity is the teacher delivering subject matter (Oakes, Hunter-Quartz, Ryan, & Lipton, 2000). The researcher sought to understand with this research question if the experience of using *collative variables* and *situational factors* to elicit situational interest would change Mary’s pedagogical practice. If pattern matching occurred with categories from Mary’s summative interview that suggested situational interest in the learning sequence *motivated her students* (Chen & Darst, 2001; Hidi & Harackiewicz, 2000; Renninger et al, 1992); *heightened her students’ attention, concentration, and affect* (e.g., Ainley, Hidi, & Berndorf, 2002; Krapp, Hidi, & Renninger, 1992; Pekrun, 2000); and *contributed to her students selectivity, and persistence* (Prenzel,1992), such desired student outcomes may encourage a pedagogical disposition and inclination to create lessons to elicit student situational interest (Guskey, 2002). If a transformation in Mary’s instructional practice occurred, the research may shed light on how the dominant culture of drill and practice in schools may be changed by student situational interest in content. The researcher believed that evidence of change could best be supported by Mary’s summative perceptions and her lesson that was designed without mentoring from me.

Data Gathering for Fall

Two sources of data were used to answer this research question: the verbatim transcripts of audio-recordings of My Summative Interview with Mary; and digital pictures and verbatim transcripts of Mary’s last lesson that was designed to create situational interest. Mary created a scavenger hunt without mentorship by me.

Summative Interview with Mary

The Open-ended Situational Scale was also used to garner Mary's collective perceptions of the study. The purpose of using the Open-ended Situational Interest Scale was three-fold. First, it was the researcher's intent to seek to understand if the categories that emerged as defining situational interest by Bergin(1999) and Chen, Darst, and Pangrazi (1999) would also emerge in the summative interview with Mary. This was done again to match for patterns in the claims made in situational interest literature and to seek out patterns unique to this study. Second, this study sought to discover if more specific situational factors would emerge beyond those identified in the work of Bergin (1999), when using Berlyne's collative variables are to design a learning sequence. Third, the scale was used to draw relationships and patterns with the categories and findings that had emerged in the student interviews.

Mary's Lesson

All features of Mary's lesson were preserved and documented. Her four work stations were documented, and verbatim transcripts of the stations were preserved. Regarding student reaction and performance for each station, verbatim excerpts from Mary are provided. The lesson was used as a database to provide evidence as to how Mary constructed meaning out of the inter-subjective experience of designing lessons with collative variables and situational factors (Suddaby, 2006).

Data Analysis for Fall

Analysis of Summative Interview

In open and axial coding, the transcripts of the recordings of the summative interview with Mary and the field notes taken after the session were read and color coded. In selective coding, patterns and relationships were identified. The data was reduced, and the frequencies of

the emerging themes and categories were charted on concept maps to generate claims and to make to practical arguments from the evidence. Concept mapping was used to establish patterns or display discrepancies with patterns found in the students findings. The goal was to determine if there was grounded evidence to support the practical argument that a teacher's pedagogical disposition and inclination would be changed by the experience of designing lessons with *collative variables* and *situational factors* to promote situational interest.

Analysis of Mary's Lesson

Frequencies of collative variables and situational variables were tabulated. Comparisons with how Mary approached lesson design prior to the study were noted. The goal was to note changes in Mary's instructional practice.

This section outlined the practices for data gathering and data analysis. The next section discusses the curriculum and its pertinence.

3.6 Curriculum

To build grounded curriculum theory in situational interest research, thirteen lessons were specifically designed with *collative variables* and *situational factors* to teach the unit *Life During the Twenties in the United States* for six weeks in a 10th grade social studies class. The goal of the research in curriculum design was to seek a better understanding of the variables that influence student situational interest. Such progressive instructional interventions that draw upon the affective and cognitive components of situational interest are needed in classrooms (Hidi & Renninger, 2006). However, lesson design to catch/trigger and sustain the affect of situational interest is not an instructional practice that is being pursued by many educators (Hidi & Harackiewicz, 2000). To address this need, this research was pursued. Although higher level conceptual conflict (perturbation) with the collative variables integrated with situational factors

was the initial focal point of this study, the researcher failed to provide adequate professional development with the teacher to achieve that aim. As a result of this failure in the design of this research, the focus of the curriculum in this study became lessons designed with low or medium level conceptual conflict. To provide an understanding and overview of the curriculum, the following sections are discussed: first, a sample lesson with a high level of perturbation; second, the definition of the degree of perturbation; the definition of Berlyne's collative variables; and an overview of the thirteen lessons with the collative variables and the situational factors used in each of the lessons.

3.6.1 Sample Lesson with High Level Perturbation Designed to “Catch/Trigger” and “Hold” Situational Interest

The collative variable that is used in this beginning of this lesson is *surprise*. The situational factor is *discrepancy*. I place a colored transparency on the overhead. In the picture, a Russian soldier has been transposed over the American soldier who placed an American flag over the head of the statue of Saddam Hussein. A Russian flag has also been transposed over the American flag. I ask the students to tell me what is different about this picture. Here, I use the collative variable of *ambiguity*.

Once it has been established that it is a Russian soldier and the Russian flag, I ask the students to describe in their social studies notebooks how they would feel if it was Russia that had went to war with Iraq, and they were viewing this picture for the first time on TV. After discussing the students' responses, I place the transparency of the American soldier who draped the American flag over the head of the statue of Saddam Hussein. I ask the students again to write down in their notebooks their reaction. Again, we discuss their responses. Then, I tell the students that I want them to think about the following questions as they work through the

problem they are about to be faced with: Does their responses reflect a bias? Do people agree with democratic principles in the abstract but disagree when they are applied to different situations? Can a democracy be imposed by an outside country? Does it matter which country is trying to impose a democratic state? Should the United States support any country who wants to depose a dictator?

The Problem

Next, I use *complexity* and add the situational factors of *discrepancy*, *social interaction*, *meaningful choices*, and *sufficient background information*. I say to the class “Each of you will be randomly assigned to a group of four. Your group is the delegate that United States has appointed to sit on the United Nation’s Security Council. In this scenario, it is Russia who wants to remove Saddam Hussein. Russia is using the exact same arguments that were presented by Colin Powell as to why Russia needs to disarm Saddam and return Iraq to its people. In fact, in a few moments, when you view the video clips of the speeches and responses of the members of the Security Council, you will view Colin Powell as the ambassador from Russia. You will also be viewing video clips of France, China, and Germany’s responses to Russia’s proposal. Your group will have only one vote—to support or not to support Russia. Your group will also receive a transcript of these video clips. Tomorrow, you will go into the instructional computer lab and supplement the video transcripts with additional information.”

3.6.2 Definition of Degree of Perturbation

What was immediately made clear in designing the learning sequence with Mary is the degree of the perturbation that is designed with the situational factors in lessons is influenced by a teacher’s experience, creativity, and willingness to support the construction of knowledge with higher level perturbations. Moreover, classifying the perturbations allow this study to examine

the relationship between the level of perturbation and the perception of situational interest. Hence, this study will classify how the variables are threaded through the learning sequences as *high*, *medium*, and *low* levels of disturbance. The above sample would be rated as a *high* degree of perturbation in a learning sequence because it requires a high cognitive demand or high conceptual conflict; it is threaded with many collative variables through the learning sequence; and it is combined with many situational factors. The perturbations will be described as illustrated in the following table (see Table 3.5):

Table 3.5: Definition of the Degrees of Perturbations

Low degree of perturbation in a lesson	Few collative variables and a few situational factors threaded throughout the lesson.	Little cognitive demand or little conceptual conflict
Medium degree of perturbation in a lesson	Modicum amount of collative variables and a modicum amount of situational factors threaded throughout the lesson.	Medium cognitive demand or medium conceptual conflict
High degree of perturbation in a lesson	Many collative variables and many situational factors threaded throughout the lesson.	High cognitive demand or high conceptual conflict

Not only is an understanding of how conceptual conflict or perturbation is viewed in this study necessary but also an understanding of how the collative variables were defined in the curriculum must be understood (Berlyne.1960; 1963; 1965).

3.6.3 Berlyne's Definition of Collative Variables

In the lessons conflict or perturbation was guided by Berlyne's (1960; 1963; 1965) definitions of the collative variables. The following table illustrates Berlyne's definitions of each of the variables (see Table 3.6):

Table 3.6: Berlyne's Definitions of Collative Variables

Berlyne's Collative Variables (Conflict or Perturbation)	Berlyne's definition of the collative variables used to design each of the lessons
Ambiguity/Indistinctness	A gap of available information that must be sought out.
Surprisingness/Incongruity	Discrepancies between information embedded in the learner's expectations and what the learner perceives.
Complexity/Novelty/Change	Uncertainty about what will be perceived next or how a pattern should be categorized or what labeling responses should be attached.

The definitions illustrated in the table above (see table 3.12) were used in the study to understand if the collation of conceptual conflict was related to student situational interest. Application of the definitions the collative variables into the lessons had demonstrated the need for better teacher professional development in moving a conceptual understanding of the collative variables into instructional practice. This is illustrated and discussed in Chapters Four and Five.

3.6.4 Overview of Lessons in the Learning Sequence

To explore situational interest from what was known to discover the unknown, Mary and I would use Berlyne's (1960; 1963; 1965) collative variables with situational factors from Bergin's list of situational factors and those identified by the study group to observe if the activity features, mental dispositions, and interactive experience features identified by Chen, Darst, and Pangrazi (1999) would emerge— *Novelty and Challenge; Exploration Intention; Attention Demand and Instant Enjoyment*—in the findings from the findings in the evidence. From Bergin's list of Individual Factors, *relevance and belongingness* (1999) would also be used to design the lessons in the learning sequence. The situational factors used from the work of Schraw, Flowerday, and Lehman (2001) were *sufficient background information and meaningful choices*. Over the six week period, thirteen lessons were designed, drawing from the literature, to explore situational interest. The table below illustrates the collative variables and the situational factors used in each of the learning sequences (see Table 3.7 on the following page):

Table 3.7: Situational Interest Variables that Guided Learning Sequence

Lessons in Learning Sequence	Berlyne's Collative Variables Used in Each Lesson	Situational and Individual Factors Used in Each Lesson
Duck and Cover	Novelty	Unexpected Physical Movement,, Social Interaction, Relevance
Isolationism	Novelty and Surprise	Social Interaction, Humor, Relevance, Hands-on Social Interaction, Modeling
Immigration	Novelty and Surprise	Social Interaction, Relevance, Modeling
Rise of Unions	Novelty and Surprise	Affect, Emotion, Hands-on, Social Interaction, Discrepancy Meaningful Choices, Sufficient Background Information
Automobile Activity	Ambiguity and Surprise	Hands-on, Social Interaction, Puzzle, Discussion, Relevance
Electricity Activity	Novelty and Surprise	Relevance, Affect (emotion), Humor
Advertising Activity	Ambiguity, Novelty, and Surprise	Movement, Discussion, Relevance, Discrepancy, Social Interaction
Model T Activity	Ambiguity, Novelty, and Surprise	Food, Social Interaction, Movement, Hands-on, Discrepancy, Discussion, Relevance, Sufficient Background Information
History Basketball	Ambiguity, Novelty, and Surprise	Social Interaction, Hands-on, Game, Sufficient Background Information
Value Road	Novelty and Surprise	Social Interaction Relevance, Hands-on, Game, Modeling, Discussion, Discrepancy, Belongingness Meaningful Choices
Capone Movie	Novelty and Surprise	Novelty, Movie, Sufficient Background Information
Car Race	Novelty and Surprise	Social Interaction, Game, Sufficient Background Information
Jigsaw	Ambiguity, Novelty, and Surprise	Hand-on, Social Interaction, relevance, Discussion, Lack of Modeling, Meaningful choices, Sufficient Background Information

Thirteen lessons comprised the learning sequence and each lesson followed the design illustrated in Table 13.3 (see above table). The following is a brief overview of the collative variables and situational factors that were used to create each of the lessons in the learning sequence (listed chronologically):

Activity One: Duck and Cover Activity

The “Duck and Cover” used the collative variable of *novelty* and used the situational factors of *social interaction* (Bergin, 1999) and unexpected *movement* and the individual factor of *relevance* (1999). To teach students the magnitude of the fear associated with communism, the students simulated the “Duck and Cover” drill that was used by children in schools in the 1950’s in the event of a nuclear attack.

Activity Two: Isolationism Activity

To teach isolationism, pictures of items that the United States buys from other countries were placed in bags in front of the room. Each bag represented a different country—Columbia, Saudi Arabia, France and China. As the items were being pulled out of the bag, the students were asked to decide how a policy of isolationism would affect this country if America no longer would open its doors to trade this item. To add *humor* (Bergin, 1999, Mary had glued a picture of a different kitten on the outside of each bag. The collative variables used were *surprise* and *novelty*. The individual factor was *relevance* (1999) and the situational factors used were *movement*, *social interaction*, *novelty*, *hands-on*, and *humor* (Bergin, 1999). This was a medium degree of perturbation.

Activity Three: Immigration Activity

To teach immigration and the Emergency Quota Act of 1921, Mary and I placed a covered box in the middle of the front of the classroom. There was a slit in the top of the box. Note cards that had dilemmas of various types of people from different countries or professions were provided to selected students to read aloud. On the board was a list of various countries. As a class, the students would have to an immigration policy that would determine which people would be allowed into the country. The groups allowed into the country would be placed in the box. The situational factors used were *hands-on, movement, social interaction, meaningful choices* (Bergin, 1999), *sufficient background information* (Schraw, Flowerday, and Lehman, 2001), and *modeling* (Bergin, 1999). The individual factor was *relevance* (1999). The collative variables used in this learning sequence were *surprise, novelty, and ambiguity*. This was a medium degree of perturbation.

Activity Four: Unionism Activity

To teach unionism, Mary opened the class by reading vivid excerpts from “The Jungle.” The excerpts explained the horrible working conditions in the meatpacking plants in Chicago. On cards placed around a pile of picket signs (yardsticks with signs attached) are issues from the 1920’s. As a group, the students were asked to decide if the issues are serious enough to leave their job to go pick up a picket sign. This was contrasted with 10 issues from today’s workplace. The “Then” and “Now” theme was used to establish the individual variable of relevance (Bergin, 1999). The lesson ended with students having a choice in designing their own picket sign. The situational factors used were, *movement, hands-on, social interaction, discussion* (Bergin, 1999), *sufficient background information, and meaningful choices* (Schraw, Flowerday, and Lehman, 2001). The collative variables used in this lesson are *novelty, surprise, and ambiguity*. This was a medium degree of perturbation in the learning sequence.

Activity Five: Automobile Activity

To teach the impact that the automobile had on this country over the past 90 years, we turned to the collative variables of *ambiguity* and *surprise*. Mary and I provided incomplete pieces of pictures that represented a consequence or benefit of the automobile. To create a gap in available information that must be sought out, the students studied each picture and had to use the incomplete clues to identify what the picture was and explain how it represented a consequence or benefit of the automobile. The *Then* and *Now* theme was used to provide the individual factor of *relevance*. The situational factors were *movement*, *hands-on*, *social interaction*, *puzzle*, (1999) and *discussion*. This was a medium degree of perturbation in the learning sequence.

Activity Six: Electricity Activity

To teach how the invention of electricity influenced history, Mary and I set up seven work stations around the room. At each station, there were two cards that had different words such as meals, jobs, recreation, education, sports, cooking, etc. To establish the individual factor of *relevance*, Mary and I used the *Then* and *Now* theme. Students had to move from station to station, evaluating how life was different *then* in contrast to *now* for every category on the card. The collative variables used in this lesson are *novelty*, *change* and *surprise*. The situational factors used were *movement*, *social interaction*, *humor*, *discussion*, and *discrepancy* (Bergin, 1999). This was a medium degree of perturbation in the learning sequence.

Activity Seven: Advertisement Activity

To have the students investigate the role of advertising in history, advertisements from primary sources were used. We used *ambiguity* to create a gap in available knowledge. *Novelty* or how a pattern should be categorized was also used. From old Life magazines and current

magazines, Mary and I cut out what product was that was being advertised. From the clues, the students, in groups of four, had to identify what it was that was being advertised and explain how the clues provided evidence for their inferences. To establish *relevance* (Bergin, 1999) the *Then* and *Now* theme was used. Students also had to explain the differences from advertisements back *then* and compare/contrast to *now*. We again set up work stations, where advertisements from *then* and *now* were at each station. A *discussion* followed. For homework, students had to create two advertisement, one for the Model T and one for a current model automobile. The situational factors were *movement*, *social interaction*, *discrepancy* (Bergin, 1999), and *discussion*

Activity Eight: Assembly Line Activity

To teach how manufacturing was changed by the assembly line, Mary and I used an activity from the company Interact. It was a simulation of a real assembly line. The collative variables of *surprise* and *novelty* guided the choice of this lesson. The individual factors of *relevance* and *belongingness* (Bergin, 1999) was used. The students signed contracts, were informed of their jobs, and practiced drawing the parts on cars that they would have to draw on the assembly line. The students were also required to follow the exact working conditions of those people on the Ford assembly line in the 1920's. When the students arrived at class, there was a big sign that said Ford Assembly plant. The desks in the room were arranged in an "S" shaped assembly line. Mary acted as the foreman. The situational factors used were *movement*, *hands-on*, *modeling*, *humor*, and *social interaction* (Bergin, 1999). This was a low degree of a perturbation.

Activity Nine: History Basketball

To review for the test, Mary and I played a game called "History Basketball." The front of the classroom is set up as a basketball court, using the wastebasket as the basket and a hacky

sack as the ball. The students were allowed to shoot even if he/she did not get the review answer correct. The collative variables used were *novelty* and *incongruity*.

In this lesson, the situational variables that were used were *game*, *movement*, *hands-on*, *social interaction* (Bergin, 1999), and *sufficient background information* (Schraw, Flowerday, & Lehman, 2001). This was a medium degree of a perturbation.

Activity Ten: Value Road

To lead into Prohibition and to get the students to understand the role that values play in shaping history, Mary designed an activity that we deemed as the “Value Road.” *Surprise* and *novelty* were the collative variable used in this lesson. The desks were brought to the front of the classroom. Mary provided the students with a current event issue such as seat belts. The students were asked to make a decision as to whether or not the current event was an issue that the government should control. If the students said “Yes,” they would move to the left side of the back of the classroom. If the students said “No,” they would move to the right side of the back of the classroom. If the students were “Undecided” they went to the middle of the back of the classroom. The students then had to “groupthink” and provide reasons for their positions and report back to the entire class. The individual factors used were *relevance* and *belongingness* (Bergin, 1999). The situational factors that were used were *social interaction*, *movement*, *discussion*, *discrepancy* (1999), and *meaningful choices* (Schraw, Flowerday, and Lehman, 2001). This was a high degree of a perturbation

Activity Eleven: Capone Movie

Because the study group identified *movies* as a situational variable of interest, Mary selected a movie about Capone that provided *surprising* and *novel* information about Capone. We wanted to observe if situational interest was influenced when the collative variables of

novelty and *surprise* were added to a movie. The situational factors were *discrepancy*, *novelty* (Bergin, 1999), *movie*, and *sufficient background information* (Schraw, Flowerday, and Lehman, 2001). This was a low degree perturbation.

Activity Twelve: Car Race to Capone's Hideout

To reinforce the content of the Capone movie, Mary and I created a car race to Capone's hideout. Students were placed into groups of four. Each group designed a gangster car as a game piece. At *surprising* moments, Mary would stop and ask a question about the movie. The groups would have one minute to cluster together and answer the question. For every correct answer, the group's car would move along the back bulletin board one car length at a time. The car that made it to the hideout first won the game. The collative variables used were *surprise* and *novelty*. The situational factorss were *social interaction*, *games*, *movement* (Bergin, 1999), and *discussion*. This was a medium degree of perturbation.

Activity Thirteen: The Jigsaw

All of the activities had been top-down. To discover if the students could create learning sequences that would encourage situational interest, Mary and I created a jigsaw to teach Chapter Thirteen. The students were placed into groups of five. Each group would create a workstation that would teach one section of the chapter, using the collative variables of *surprise*, *complexity*, *ambiguity*, *novelty*, *change*, and *indistinctness*. Every display had to have the following chairs that would be completed by every student:

One chair is "the story" of that section of the chapter-Students have to complete questions about the section. This can be in the form of a game or any *novel* approach. It is the informational chair of the section.

One chair is a comic and quote chair. Leave off (*ambiguity*) the words in the comic and some of the words of the quote. Students must fill in and justify.

One chair is the creativity chair. Here, students must create a cartoon, a poem, make fun of the subject, create 5 analogies, explain how the crash would occur in the animal kingdom, create a myth with a super hero. Students get to choose one (situational variable of *fantasy* Bergin 1999).

One chair is a “*then and now*” chair. Students establish personal meaning here—how does this relate to me (*relevance*, Bergin, 1999)?

One chair is the *discussion* starter chair. Every student will write a question about this part of the chapter that he/she wants to discuss in class.

This activity was a high degree perturbation.

The curriculum and findings from each of the lessons in the learning sequence are discussed in vivid detail in Chapters Four, Five, Six, and Seven. The four seasons are used to metaphorically illustrate how situational interest grows throughout the study.

3.7 Credibility and Dependability

Qualitative standards of integrity were followed to enhance the credibility and dependability of this study. While quantitative research is held to internal and external validity, reliability, and objectivity to establish trustworthiness, a qualitative study uses alternative strategies to establish credibility, transferability, dependability, and confirmability (Ary, Jacobs, & Razavieh, 2002). Transferability of a study is contingent on how the standards of rigor of qualitative research were followed and the “goodness of fit” (2002, P.454) of the methodology. To establish trustworthiness in this study, the study employed rigorous standards that contribute to the integrity of its findings. The following sections discuss how and why these strategies were used.

Credibility

Credibility is the degree of confidence in the truthfulness of the researcher’s observations, interpretations, and conclusions. Credibility in qualitative research is predicated on five criteria: structural corroboration, consensus, interpretive adequacy, theoretical adequacy, and evidence based on control of researcher bias (Ary, Jacobs, & Razavieh, 2002). To enhance the credibility of this study, such strategies were employed in this research.

Structural corroboration, consensus, interpretive adequacy, theoretical adequacy, and control of bias were major considerations in this research. Eisner describes structural corroboration as the multiple forms of data that are related to each other to support or contradict the interpretation and evaluation of the phenomenon under study (1998). To accomplish structural corroboration in this research the following procedures were followed: each lesson was videotaped; the students and teacher interviews were tape recorded and then transcribed; after open coding was done to develop concepts, categories, and properties, connections between categories and sub-categories were established to build a theoretical framework; after this was done, the findings of each of the data sources were compared and contrasted to check for disconfirmability or corroboration; finally, journal entries and memos were used to support or contradict the interpretation and evaluation of the findings (Ary, Jacobs, & Razavieh, 2002). This was done over a period of two years to enhance structural corroboration.

Peer review was also used to promote credibility. Eisner (1998) defines consensus as “agreement among competent others that the description, interpretation, evaluation, and thematics” are right (p. 112). In this study, the transcriptionist and a reader with a degree in psychology reviewed the interpretation of the data for problems in interpretation or consensus. Both reviewers contributed their versions of any problems in evaluation; yet, they expressed consensus with 80% or more of the interpretation of the findings in this research. Member checks with Mary and the students were also conducted throughout the study.

Further, techniques to foster interpretation and theoretical adequacy were employed. Verbatim transcripts of multiple sources of data gathering and video recordings of each of the lessons were used to help the researcher convey adequacy in interpretation of the data. Throughout every stage of the study, consideration was given as to the claims argued in

situational interest theory by multiple researchers in the extant literature. In grounded theory methodology, the findings supported in the evidence are used to build theory. As theory emerged from the findings in this study, theoretical propositions were matched for patterns in other theories (Ary, Jacobs, & Razavieh, 2002). This was done throughout all stages of this study.

Finally, a journal was kept before and throughout the study to control for researcher bias (Krefting, 1991). After reviewing the video tapes of each lesson and coding the transcripts from the student and the teacher interviews, the researcher reflected in a journal. This was done daily, weekly, and throughout the study. To control for researcher bias, the researcher's thoughts, feelings, ideas, questions, concerns, problems, and frustrations were explored for bias (Krefting, 1991). This was done by using a "constant comparison" approach with the multiple data sources.

Despite these measures taken to promote the credibility of the findings of this study, the scope of the findings was limited by the researcher's failure to appropriately facilitate teacher change. Although the design of the study suffered from the lack of more research-based professional development for Mary, the findings in this study claim to have merit to a better theoretical understanding of using *collative variables* and *situational factors* to elicit situational interest in instructional lessons.

Dependability and Confirmability

In qualitative methodology, dependability is how the consistency of the findings may be tracked or explored (Ary, Jacobs, & Razavieh, 2002). In this study, multiple data sources were used to confirm consistency in the findings. Over a two year period, notes were taken from the video tapes of the lessons. The video tapes were viewed three times to foster accuracy of interpretation—first, the researcher reviewed each of the lessons to extrapolate evidence after

each lesson; next, the video was reviewed with Mary to garner her meaning making of the videotaped lessons; and finally, the researcher reviewed the video tapes again one year after the study to check for consistency of interpretation. Throughout the study and over a two year period, the transcripts from interviews and notes were color coded-and recoded. The frequencies were displayed on concept maps. Post-its were used to memo patterns in relationships or inconsistencies. This was done to test for adequacy in interpretation. Dependability and confirmability were addressed by thoroughly recording, organizing, and preparing the data to establish an audit trail (Ary, Jacobs, & Razavieh, 2002).

To also promote dependability and confirmability, multiple sources were used in the audit trail. The audit trail includes: verbatim typed transcripts of the interview sessions with Mary and the students; video cassette tapes of the lessons; hand written and typed journal entries; field notes; memos; post-its; consensograms; the students' surveys; samples of all resources used in the study; and raw data was reduced to concepts, categories and propositions through concept mapping. The names of the students and teachers in the study were all changed to protect confidentiality. Preparing all of these sources and adhering to the stages and strategies in grounded theory methodology for a future audit demonstrates neutrality and openness to corroboration in replication to support the consistency of this research (Ary, Jacobs, & Razavieh, 2002). In addition to the audit trail, researcher bias was checked by peer debriefing with the transcriptionist, member checking, consistently asking questions with the data, and seeking out disconfirming evidence.

In sum, the goal of this study was in keeping with the claim made by Mischler (1990) that the aim of good qualitative research is that people believe the findings strongly enough to act upon them.

3.8 Chapter Summary

In this chapter, the rationale of the methodology was explained in detail. Next, a discussion of the inception of this study was proffered to provide an understanding as to why this research was pursued is proffered in the form of a narrative. Third, the context of the study was described. Fourth, for each of the research questions, data gathering and data analyses were described. Fifth, the critical attributes of the conception of the curriculum were discussed, and finally, the issues related to the reliability and validity of the grounded theory tradition was detailed.

CHAPTER FOUR

WINTER IN THE OLD NEIGHBORHOOD: THE BARE BEGINNINGS OF OUR PEDAGOGICAL DISPOSITIONS AND DISPARITIES

4.1 Introduction

How this researcher intervened in Mary's design of a lesson sequence in a unit of social studies is metaphorically portrayed in Chapter 4—The Winter in the Old Neighborhood. When we shared alternative ways of teaching social studies, Mary's prior pedagogical dispositions were exposed. While attempting to intervene in her thinking, critical disparities to our pedagogical practices came to light. The unfolding of our pedagogical dispositions and disparities is interspersed with my experiences and interpreted from my perspectives. Our conversations signal discernible tension because of the dispositional disparities on what counts as good social studies pedagogy.

The pedagogical dispositions and disparities were captured during our conversation on planning for the first week of teaching events. Evidence supporting our pedagogical dispositions and disparities were selected primarily from **Transcripts of Tape-Recordings of our Planning Conversations (TTRC)**. **My Journal Entries (MJE)** is also a data source for this chapter. Chapter 4 is framed by the following four categories of meaning constructed from the foregoing sources of data:

1. Drive to Displace the Old Neighborhood
2. Display of Old Neighborhood Learning Experience in Lesson Design
3. Disturbance and Disinclination in the Old Neighborhood
4. Diffused Light in the Old Neighborhood

4.2 Drive to Displace the Old Neighborhood

The study began over a bagel and coffee when Mary said, “C’mon! let’s go! I remember the hours you had spent with me, helping me write my essay to get into University of Michigan, Ann Arbor.” For any change to occur in pedagogical practice, one needs to explore existing dispositions to teaching. Based on this premise I desired to first understand Mary’s ideas of lesson design. It was assumed that introducing new ways of teaching from a booklet that I had put together to assist teachers would be a useful way to elicit Mary’s pedagogical dispositions.

Pointing to the *situational interest* integrated lesson design of Berlyne (1963) in the booklet, it was explained to Mary that the study aspired to integrate: *ambiguity* and *indistinctness*, where we would create a gap with available information; a complex pattern or a sequence of novel stimuli, where we would create *uncertainty* about what would be perceived next in the learning sequence; *novelty* and *complexity* in a lesson design, where we would create *uncertainty* about how a pattern should be categorized or what labeling responses should be attached or what overt response is appropriate; or *incongruity*, where we would create a discrepancy between information embedded in the learner’s expectation and the information embedded in what the learner perceives. With *surprisingness* and *incongruity*, there is a discrepancy between information embedded in the learner’s expectation and the information embedded in what the learner perceives (Berlyne, 1963, 1965). It was explained that we would be disturbing lessons by creating *variations in the content of a lesson by moving from the familiar to novel, from simple to complex, from expected to surprising, from clear to ambiguous, and from stable to variable* (Berlyne, 1963, 1965). It was also indicated that we would combine these disturbances with the *situational factors* claimed in the work of Bergin (1999) those that

the students deemed as *interesting* and stress the situational factor of *relevance* (1999) in each of the lessons.

To Mary, the integration of the *situational interest* variables—*surprise, novelty, change, ambiguity, complexity, and indistinctness*--into a lesson sequence meant brain-based learning—“I think we are talking about brain-based, and that kind of thing. Brain based is a lot of work, would you agree with me?” (TTRC) I agreed that the lesson design that engages students takes much work. Mary elaborated on the notion of work involved:

It is a lot of work! I teach a class for CMU (Central Michigan University) on brain-based learning for teachers and the teachers look at it and say that's too much work for me to do that. It's easier to just put things in front of students, especially at the high school level. They feel students should be able to take in whatever information they are given because they are older and more mature, and therefore, they should be treated as though this is a college prep class, and you should be able to take whatever they give you like sponges no matter what way I give it and learn it. Do you agree with me on that? You know, this is the way educators view it? (TTRC)

Mary's perception of brain-based learning stemmed from teaching it at the Central Michigan University and talking to colleagues at that university. Mary pointed out that it requires much work and that it is easier to put information in front of students rather than immerse them in content. She believed that most teachers in a university course that she had taught felt that high school students should be able to absorb content information in whatever format it is presented. Mary also expected the college prep students should take in information.

Mary pointed to key pedagogical dispositions that most teachers concur in developing lessons: degree of work, ease of work, and appropriateness to high school students because of age and maturity. Mary expected me to agree with her on the issue of the amount of work involved in alternative ways of teaching, and the issue of college preparatory students being able to absorb knowledge like sponges. I agreed with Mary with respect to the amount of work

involved in developing deeper understanding of subject matter. However, I could not resonate with Mary's metaphor of students' mind as sponges. I viewed students' minds as thought centers that lie in wait for challenging stimulation. Our pedagogical disparities began to surface on day one of our discussion about teaching and learning. It was made clear to Mary that I understood where she was coming from and the intent of this study was to change such mindsets. My forthright statement on teacher change possibly created a platform for Mary to start defending her pedagogical dispositions and vacillate acknowledging the novel ideas.

I shared with Mary that I would like to divide the 55-minute period similar to a musical composition so that learning experiences may fluidly move in and out of the variables of *situational interest--surprise, novelty, change, ambiguity, complexity, and indistinctness--* to see if this would catch and hold students' interest, instead of uttering, "Okay, let's read..." Mary quickly responded:

In terms of the brain based learning, let's say kids roughly this age can go let's say 15 to 20 minutes, yet our class periods are 55 minutes. Everyone is saying because of TV and the video games, and all this kind of stuff, that the kids have ADD going on. So, does this mean we have to cater to them by coming up here and entertaining them with our own little TV show for history class? (TTRC)

Mary applied the brain-based learning to their listening span and compared it with the length of each class period. Mary declared that students are greatly influenced by TV shows or video games. The ADD also affects learning. She may have likened *novel* learning and integrating *situational interest factors* to a learning design to creating our own "little TV show for history." I clarified that I would not be asking her to entertain. Rather, she was solicited to look at the curriculum and associated materials in different ways. Using example and experience, a story from a recent experience was shared with Mary to better understand my perceptions of the *perturbations* in the learning sequences. At this juncture, I recalled my conversation with a

young student teacher who I had been working with from our school math department. Our conversation revolved around the concept of teaching lines.

The student teacher had come in to ask if she could use my classroom because students would be taking the Michigan Merit Exam in her classroom. I asked this teacher how her student teaching was going. With exuding confidence, she assured me that all was going well. Then I asked her what she was teaching the next day. She told me that she will be teaching the concepts of parallel and perpendicular lines. I belted out, “Sounds like fun! So, how are you going to teach the concepts of parallel and perpendicular lines?” I inquired the student teacher with an enthusiasm that she wasn’t expecting. She immediately replied, “We’re doing sections 2, 4, and 6 in the book.”

Referring to this experience with the student teacher, Mary was told that my eyebrows had knotted together like a couple embraced in a peculiar tango. I told Mary that I blurted out to the student teacher, “Why are you teaching it like that?” I saw in the young teacher’s eyes that she was struggling to understand whether or not she should quickly flee or strongly defend her actions to this old veteran educator. She shrugged her shoulders and said “It’s the next section in the textbook.” The young teacher saw it as a natural progression in providing learning sequences to continue to move from one section to the next. “Do you think this will be a memorable learning experience for the students?” I said to the student teacher in a manner that reached out with a bit more sensitivity. She quickly reminded me that not every student likes math. To motivate students in learning math, I replied thus:

How would the learning experience be different if the students had to get into groups of four (*social interaction*) and use straws (*hands-on*) to invent a solution to a problem that required the understanding of the usefulness or structural soundness (*relevance*) of these two types (perpendicular and parallel) of lines? And how would the lesson be different if you prefaced your lesson by pointing out to them the role that perpendicular and parallel lines play in their everyday

lives (*relevance*). For instance, in a car, how would it be different if we had the brake at the bottom and we had to put our foot on the top to accelerate? What about our toilets—line does play a role in one’s comfort. Wouldn’t that be a more novel way to learn about line? You need to plant surprises in your lessons. (TTRC)

I attempted to explain what I was trying to get the student teacher to do was to integrate *surprise* and the individual factor of *relevance* (Bergin, 1999) and the situational factors of *hands on and social interaction* in the design of a math lesson. I continued to share with Mary my experience with the student teacher regarding the concept of teaching lines. Again, I asked the young teacher, “Parallel and perpendicular lines—how would your lesson be different if it were designed to teach that from a functional perspective?” Now, I caught the student teacher’s attention to my vision of teaching. This morning, the student teacher came in to show me her proud creation. She had gone home that night and put together a lesson plan, where the students will get together in groups (*social interaction*) and create a product where line has a vital meaning in the product’s ability to function (*relevance*). After the completion of the product, she will have her students describe the concepts of parallel and perpendicular lines.

The message being shared with Mary was that teaching parallel and perpendicular lines through the *novelty* of function with *relevance*, *social interaction*, and through a *hands-on* lesson would have the students more engaged, and the young teacher will be a better educator. I continued my conversation with Mary.

That’s where I want to see more teachers going—where there is relevance and more affect—where the students’ equilibrium and state of habituation is disturbed. This will move the content to real meaning to the student, and they are able to see it. More importantly, I would like to see them use the conflict involved in surprise, novelty, ambiguity, indistinctness, change, or complexity to get there. I think teachers are lost in lesson design, and I don’t think many teachers are doing any more than following the next section in the book when it comes to lesson design. This is the direction where I want us to go in this study. (TTRC)

In this conversation with Mary, I voiced dispositions to teaching that were guiding this study. My thoughts centered on ideas such as *relevance* (Bergin, 1999), *affect or emotion* (Bergin, 1999), disturbing students' mental equilibrium and habituation, translation of content to real life, and creating conceptual conflict involved in variables of situational interest. Much of instruction in public education was just assigning the next section in a textbook, and the point of this study was to perturb students' state of equilibrium and habituation through *situational factors* with *conceptual conflict*, *relevance*, and *affect*. She responded, "Do you think we don't do this because there is so many curriculums to cover or because sometimes integrating an extra nuance to things also adds confusion. Sometimes there is confusion before you get to the content." (TTRC)

Mary questioned whether or not adding *affect*, *relevance*, and the *collative variables*, and the *factors of situational interest* would distract from meeting the large number of curriculum mandates. She viewed the collative variables of *surprise*, *ambiguity*, *novelty*, *change*, *complexity* and *indistinctness* as "extra nuance" that confuse the state of mind. Because it was hoped to ascertain Mary's perspective on the role of confusion or disturbing the equilibrium in the act of learning, I interjected, "Don't you think confusion has cognitive value?" "Sure. I am not saying it doesn't," Mary replied. I quickly elaborated:

We need to *disturb*. If they are not disturbed, they are not learning. They must have to re-organize in their sense-making. That's what will make them think. That's what this is all about. I want to look at disturbing and reorganizing students' thinking together and say if we do that, are they more engaged? What do you see? Does this increase interest? We don't know until we see it. That's where we are going with this study. I can't watch myself do this in my own classroom. I need to see it from somebody else. I need to see you do it. Are you going to be okay with this? (TTRC)

I desired Mary to understand that lesson sequences she designs should consist of *perturbation* that enables students to reorganize their sense-making and result in greater

situational interest. I was eager to see the co-relational link between disturbance or re-organizing of student thinking and their engagement in learning. The initial research question was whether or not disturbing students' thinking will increase their interest in learning. Because it is difficult for a researcher to observe such evidential patterns and links in his own classroom, the study needed to be conducted in another classroom. I required Mary to do what I had in mind. I wanted affirmation from Mary that she would be interested in doing this study and use her classroom as a research laboratory to experiment with combining *collative* disturbance (Berlyne, 1960; 1963; 1965) with the *factors of situational interest* (Bergin, 1999).

Mary assured me that she was “okay” with that and looking forward to working with me in the study. I requested her to go home and think about how she had planned her lessons. I needed to understand how she approached lesson design. I asked her if she would be prepared to talk to me on Monday.

4.3 Display of Old Neighborhood Learning Experience in Lesson Design

It was early Monday morning. When we had agreed to meet an hour before the start of school three times a week, or whatever time it would take after school to understand how Mary approached lesson design. I asked Mary if she had reflected on how she created lessons for Chapter 12, a chapter in the social studies textbook to be used during the six weeks of investigation. She assured me that during the weekend she had thought about how she had created lessons. I asked her to think-aloud with me her approach to designing lessons. She began:

I think it's different every time. Like I told you last week, I think that this year for me, I feel like, in my life, I have a certain part of the pie that I have time to devote to planning lessons, as compared with, you know—I have to check with my own kids and that kind of thing. With the time that I am spending on it this year, a lot of the time that I am spending as you know as a first year person doing this is actually learning the content myself. I spend a lot of time myself reading through the chapter and brushing up on things and making sure I understand it, so I don't necessarily have as much time to make great lesson plans. You know, next year

I'll have the time to sit down and look through the lessons and make them into the kind of gold star ones that I would want them to be. I think a lot of people teaching a subject for the first year would be doing something like that as well. (TTRC)

Mary stated that she created lessons differently each time. Mary claimed the time she was able to devote to lesson designing was relative to the time demands that were placed upon significant others in her life. Mary was a veteran teacher but this was the first time she will be teaching American history. She contended that her inexperience in teaching American History placed her at a disadvantage with respect to the content knowledge and that she would prefer to spend time on learning it herself rather than “to make great lesson plans.” For Mary, learning the content and making lesson plans were two processes that required time. She thought when she understands the content better, she will be able to “make (the lessons) the gold star ones” the following year. These lessons will then be the way she “want(s) them to be.” Mary believed that a strong knowledge of the content had an influence over the quality of the learning sequence that a teacher designed. This view is shared by other teachers who taught a subject for the first time, she added.

Without answering questions on how she approached designing a lesson, Mary raised two issues that affected her practice: Dividing time between family affairs and commitment to teaching, and teacher understanding of subject knowledge for quality lesson plans. These issues are not anything new and they are part of one's teaching life.

Up until now, Mary has been focused on the constraining factors of her teaching. I re-focused her attention to the approaches on the design of lessons. She was asked to describe her thought processes as she designs a lesson sequence.

I guess I look at when I first came over here (at the high school). Every time when I teach something here, I check the curriculum. I go through things and make sure I am covering the things I need to be covering. I go through that first, and then I look through the chapter. This year I am pretty much following the text book in

terms of getting the information that I need to get. I am hoping after this that I can vary it a little bit. But this year, I am following the text book, and I actually look to see that I am. Next, I kind of block out the chapter, the entire chapter and see how long it is going to take me to teach it. Then, I decide what kind of activities that I want to have the kids doing after I give them the information. I am finding with these kids or at least the majority of the kids that I am spending a lot more time on each chapter than I would think I would need to for them to understand it. (TTRC)

Mary reflected on her approach to lesson design. She first checked the curriculum to make sure that she will be “covering the things” that she needed to cover. Next, she went through the chapter to identify the information that she needed “to get.” She admitted to me that she pretty much adhering to the book and makes sure that she is following the book. This might be because of her earlier admission, “This year I am pretty much following the text book in terms of getting the information that I need to get,” that she is lacking in content knowledge because this is the first time she is teaching American History.

Returning to her approach to teaching, Mary stated that she blocked out the entire chapter and created a pacing guide. When she identified how long it will take her to teach the material, she decided on activities that students will do after she gave them the information. Mary noted that her pacing plan was not adequate to provide students with a deeper understanding of the subject matter. She recognized that realistically it will take her longer to get through a chapter than was expected. The wintry conditions were obvious in Mary’s comments.

Later that afternoon, I pondered in field notes,

Why is a child’s ability to understand measured by an expectation of time—a measure of defined moments of time where a child ‘gets it or doesn’t get it.’ So many times a teacher abandons student understanding because the time measure allotted for knowledge construction or understanding does not commensurate with what is expected of a teacher. In other words, we have to move on! (JE)

I became more cognizant of a contextual reality—time being a major issue for the development of student understanding—a condition of the “winter in the old neighborhood.”

Continuing with our conversation, Mary was asked why she felt it was taking her more time on each chapter than she thought it would require. Her reminiscence of her own learning experience follows:

When I remember taking history classes when I went to school—I don't put U of M into it because, I don't feel I can, you know what I mean, it was a different situation—but when I was in school, we would spend every day, almost like the unit you were talking about in our first meeting. Every day was one section, and we went through this section. Every day, we knew what was going to happen. We knew what was expected. We read the chapters and there were the kids who failed and the kids who passed. That was just the way it was. Do you understand what I am saying? I don't know if that is right or not, but that is just the way it was. Everyday we'd follow the same things. We did the questions at the end of each section. We did the questions at the end of each chapter. Then, after the test day, we watched a movie the next day. That was the way we did it.

And the funny thing was, was that I liked it. It worked for me. I liked history. So, it wouldn't have mattered how it was taught—you know what I mean? But then back then, I didn't have a Nintendo. I didn't have all this stuff that made everything so exciting and fun after school. So, I wasn't competing—you know—Mr. T wasn't competing against all of this stuff. I had channels 2, 4, and 7 at home and that was it. It is different now. Those are things that I think about when I look in the back of the room and I have a kid that is secretly listening to a radio, and I couldn't even tell until I got back there. I realize what I am going up against. It is a lot different now than it was back then. This is all I have to compare it against. So, when I look back at things, it was really easy for me to read the chapter and to understand what was probably going on in terms of history. When I was in school that is what I did. I was a reader. I was into all of that kind of stuff. I look at the kids now and they are not. If I ask them to read a section of material and then I asked questions without going over it, it is very obvious that they did not understand what that particular section was talking about. (TTRC)

Mary described the routine of her high school history class that consisted of covering one section of the chapter each day. After the students had taken notes, students answered the questions at the end of each section and chapter. At the end of each week, she remarked there was a test and a movie followed. The classes were predictable, and she always knew what to expect. Mary perceived that most of her high school classmates read the chapter and those that did not failed. Mary felt that such failures were acceptable. Mary liked the routine and

predictability of her high school social studies learning experience--“It worked for her,” she exclaimed.

Mary compared the life of children now to the past. She stated that when she went to school she only had three channels on the family television set. Unlike when she was a student, Mary believed that the present day teachers have to compete with other attractions to draw students’ attention. She stated, “I wasn’t competing—you know—Mr. T wasn’t competing against all of this stuff.” She saw that technological advances such as Nintendo are now causing what a student chooses to do with his time. Concerning the students’ priority with their time, she remarked, “I didn’t have all this stuff that made everything so exciting and fun after school.” She was bothered that students were able to disguise iPods under their hair and clothing and listen to music during class time without it being detected by the teacher. Believing that these devices influenced whether or not students desired to read the chapter, Mary stated, “I look at the kids now and they are not (reading the chapter).” Because many students choose not to read an assigned chapter, Mary argued that she must go over each section, explain what it is about, and expect students to take notes so that students will be able to understand the content matter. These were the reasons Mary stated for her pacing taking her longer to cover a chapter than it should.

Mary strongly believed that it did not matter how information was presented, teachers are competing for students’ attention in learning. She argued that the present day generation of youngsters is not reading enough because of technological advances that have captivated and distracted them from the essentials to learning. According to Mary, teachers are indeed competing with attractions out-side the school. Again, Mary was pointing to issues that teachers confront because students’ mind-set do not align with theirs.

Mary was asked if she felt that the way she had learned had influenced how she approached her lesson design.

I think a lot of people may look at things at the way in which they learned it themselves—just because that is their experience. Now, I don't teach things in terms of the way that I best learned them. I don't think I do that at all. I think teaching bilingual students brought a lot of things to me that I didn't know before that. And even though it was for bilingual kids, it stands to reason for a lot of students as well, like the special ed. students. I think we have a lot of kids, who I don't want to say whether they are low readers or not, because they might be very good readers, but I think that a lot of kids have very low reading comprehension. Even though their fluency may be great—you know what I mean—so they can read a lot of things but when they are reading a text book, I don't think a lot of kids understand what it is exactly they are reading, and I don't know if that has changed. (TTRC)

Mary believed that people view the world how they have learned it. Mary did not think that she taught in the same manner that she had learned. This is because her bilingual background and certification in Spanish have made her more aware of the reading comprehension needs of students in the general population. Further, she perceived that many students may sight read well, but their comprehension level was very low. This perception was obvious in her statement, “They might be very good readers, but I think that a lot of kids have very low reading comprehension.” Mary felt even when students are reading the text book, students did not “understand exactly what they are reading.”

I was eager to hear what role her college experience had played in her approach to lesson design. She was asked if her college experiences involved lesson design. “At the University of Michigan you were pretty much on your own,” Mary replied. About Marygrove, she quickly answered, “Surely, a Masters in the Art of Teaching would deal with lesson design.” Mary then elaborated on her experience of learning how to design a lesson.

No. Well, I think because it was a Master's level class, and they assume that we already knew that. They went on from there. Probably, my best experience with lesson design would have been when I took a class in my other masters degree at Saginaw Valley in Middle Level Education. This man named Joe S., who

definitely sounded like Burl Ives, was really interesting. He did this great thing in it! Even though we didn't know it at the time, it incorporated a lot of brain-based learning. At the time, they called it middle level education—you know the kids need a certain amount of time for this, and they need movement and excitement and all this kind of stuff. Well, it turns out fifteen years later, well, everyone is saying that everyone does, but he was saying that this is what these adolescents that are 12 to 14 need. (TTTC)

Mary viewed that her best experience in lesson design was provided by a professor at Saginaw Valley who taught a course on Middle Level Education. She equated the content emphasis of Middle Level Education to brain based-learning--“Even though we didn't know it at the time, it incorporated a lot of brain-based learning.” Mary perceived that brain-based learning involved “movement and excitement and all this kind of stuff, not just for adolescents that are 12 to 14 years old.”

I asked Mary to tell me more about how she was designing the lessons for Chapter 12.

This is what I do--right, wrong, indifferent—this is what I do. I usually take the material that I have—you know, the content. I look at it and I see how it would best break up into classes in terms of things. I do try to get the kids to do some reading on their own. I usually find it is a waste of time, even when I give it during class time for them to read the chapter. I will get done and I will talk to them about it, and I might have one kid out of 30 who has comprehended what he has read or actually used what we have done. So, I don't do that very often anymore. Instead, I usually give them a lot of notes and have them go through them, usually on the overhead. I try to break everything up so it will make sense so the kids can learn it. From there, I take the overhead notes that I give every day and see what kind of activities I can use to re-enforce this. I look through things, and I look through the stuff and the text book and quizzes and worksheets and stuff like that—you know like MEAP strategies, and see if there is anything good in the chapters. Some of the chapters are good, and some I don't like as well. Also, I see if there are things that I have, especially in my 2nd hour class (the one in the study). I have a couple of very low, low readers in terms of special ed. So, I do what I can do for them in terms of an equivalent homework assignment and things to re-enforce what we are doing. Then, I go through to see what vocabulary words that are in the chapter. I feel they are very important they learn but some are not important and some are more important. I make sure I incorporate them into the overhead notes, like five different times. Then, I have the kids kind of what Mr. D. does. I have them do the vocabulary words and draw a picture with it. I do different things with the words, and I write the textbook definition. Next, we go through the textbook definition, because they won't know what it means

anyway. Then, I break it up into days. I kind of set my whole time up. At this point, I'll have the test and the review and a plan. I make sure I don't have it on a Monday or something, and then I'll include a movie or something from United Streaming that will go along with it. That's how I do it. (TTRC)

In designing lessons for Chapter 12, Mary first examined the content to discover the best way to “break (it) up into classes in terms of things.” Earlier, Mary attempted students to read on their own, but she found this was a waste of time. She found that when she did assign reading “one kid out of 30 who has comprehended what he has read or actually used what we have done.” Finding this to be true, Mary did not assign reading often anymore. Instead, Mary usually provided notes on the overhead and went over them with the students to provide an understanding of the material. To aid sense-making of the material, Mary broke the material into smaller chunks—“I try to break everything up so it will make sense so the kids can learn it.” She believed this teaching procedure will enable students to learn the material better. She then used her overhead notes and aligned them with activities to reinforce learning. She looked through “the text book and quizzes and worksheets and stuff like that...MEAP strategies.”

Mary liked some of the activities that were offered in the chapter and others she disliked. To help special needs students better understand the content, Mary looked at some activities that she liked in the chapter and created equivalent homework assignments. She ensured to select important vocabulary terms and repeatedly (“like five different times”) integrated these throughout the overhead notes so that special needs students will pay attention to social studies language. To improve special needs students' understanding of the concepts, Mary drew pictures of the words or wrote the textbook definition of the vocabulary terms on the overhead. After students had completed the activities with the vocabulary words, Mary reviewed the textbook definition once again because Mary felt “they (students) won't know what it means anyway.” From the foregoing steps, Mary developed a pacing guide and a plan. She ended the chapter with

a review of the material and a test on any other day than a Monday. Finally, Mary completed the chapter with a movie or a video from United Streaming to reinforce the curricular material presented in the textbook.

Mary was a product of the old neighborhood, and her approach to designing lessons for Chapter 12 is strikingly similar to the teaching approach that had raised her. The textbook work, the worksheets, the notes on the overhead, the vocabulary words, the reviews, the quizzes, the movies are all shadows cast from her public school experience and have followed her into the classroom. Although Mary espoused brain-based learning theory, her statements to me about her lesson design for implementation are indicative of the old neighborhood. Mary's explanation of how she designed learning sequences for Chapter 12 resembled my example of the math teacher who modeled to the young student teacher "... doing sections 2, 4, and 6 in the book." is an acceptable lesson design. What happened to the professor from Saginaw Valley College who had provided her the "best experience with lesson design," that students "...need movement and excitement and all this kind of stuff." "I cannot find him in this neighborhood; I cannot find him in how Mary described how she designed lessons; and I cannot find his pedagogical thinking in most teachers in this old neighborhood. Yet, it was Mary's best experience in lesson design. Where does this "best experience in lesson design" get lost?" (ITIN)

A very wise woman, who I call my second mother, always told me, "We can't see it in ourselves." The overhead notes, the vocabulary was not much different from that old neighborhood. However, Mary was different in a very important aspect, for she accommodated the special needs students in her lesson design. As Mary put it "... there were the kids who failed and the kids who passed. That was just the way it was." (TTRC) Cognizant of this old neighborhood thinking that allowed children to fail, Mary worked with special need students

before and after school. She consulted with other teachers about ways that she can help make these students successful in their classes. The old neighborhood thinking just lets children fail.

After Mary provided me with an overview of how she designed her lessons for Chapter 12, Mary was asked if she thought about how the content was *relevant* (Bergin, 1999) to the students when she designed lessons.

Well, I thought of that when I first came here, that I was going to pick and choose the cool stuff to teach them, and then I see the list of things that the kids are supposed to know from the MME and that kind of stuff. There is a lot of things on there that I necessarily wouldn't call the cool stuff. I do try to make a lot of connections. I try to think of as many things as I can, maybe not to the level that we'll be doing in this, but I try like when we are doing the different notes and things. I try to get the kids involved as best I can. I make up stories, you know, that kind of go along with what we are doing trying to get the kids involved in it. You know, like imagine we were talking about how the cost of living doubles after WW I, and all this kind of stuff. When I start, for example, tomorrow, when we start talking about Chapter 12, the first thing I am going to do with them is brainstorm about how the US had been affected by the war, and how things were for people after all the troops were back. (TTRC)

Mary associated designing lessons to “pick and choose the cool stuff to teach them.” When she examined the content standards and benchmarks for the Michigan Merit Exam, she did not consider many mandated items as “the cool stuff” to teach. Mary viewed “the cool stuff” as content that allowed her to begin from a perspective of relevance. Through the “different notes and things,” Mary tried to “make a lot of connections” and got the students involved in the content as best as she could. She did this by making up stories that were aligned with the content that she wanted students to be involved with or by having them imagine scenarios about the time period. She also made connections by having students brainstorm aloud how the nation had been affected by an event.

While Mary viewed that her description of her dispositions to teaching regular and special needs students are defensible, her learning sequence design was not close to what I

envisioned as the learning sequence that this study required to engage *situational interest*. There were discrepancies in our dispositions to our approach to teaching. Now having listened to and having better understanding of Mary's teaching, I was ready to disturb her thinking, but Mary was disinclined.

4.4 Disturbance and Disinclination in the Old Neighborhood

Relating stories, having students imagine scenarios about the time period or having students brainstorm aloud about how events impacted the time period were all ways to have students make connections with the content, but it was not how this study could be orchestrated. At the very early stages of this study, the purpose of the study was disclosed. The gap between Mary's pedagogical ideas and mine appeared large. If hopes to experiment with the *collative variables* and establishing the *situational factors* could be realized in this research, it was suggested we work together to create the activities and orchestrate the learning sequence for Chapter 12. To discern the role of the *collative variables* on situational interest in lesson design, this study would have to integrate *situational factors*, especially those deemed by the students as interesting, with the collative variables of *surprise, complexity, ambiguity, novelty, change, and indistinctness*. I asked her if she had a chance to look at the booklet that I had given her (see Appendix). I told her we would be drawing some ideas from the Synectics portion (Gordon, 1961) and other ideas from the Creative Enigmas of Heraclitus (Von Oech, 2002). To create the perturbations, I wanted to get Mary thinking "out-of-the-box." (TTRC)

Mary responded,

Are you going to have student teachers reading this? Because this is going to be, I don't know... too deep in terms of what people are doing—the connections they are trying to make in terms of their actual lessons. Well, I mean looking at this, I think that people like to leave, like if you were doing an in-service, I think people like to leave with really practical things, not ivory tower stuff. (TTRC)

A booklet was created to provide an example for teachers as to how they could integrate elements of situational interest--*surprise, complexity, ambiguity, novelty, change, and indistinctness*--in designing learning sequences to actively engage students in learning. The booklet provided teachers with the following strategies for creating conflict between competing alternative meanings or ambiguity: imponderables (Feldman, 1990), dilemmas (Kohlberg, 1981), paradoxes, (Clark, 2002), controversial issues (Johnson & Johnson, 1992), questions (Kaplan, 1986), and cognitive conflict strategies (Cosgrove & Osborne, 1985). For *surprise* or incongruity or to create a discrepancy between information embedded in the learner's expectations and what the learner perceives, the teacher may use Synectics (Gordon, 1961), metaphors, analogies, mystery, fantasy, or Roger von Oech's (2002) methods to enhance creativity in the learning sequence. To create uncertainty or a novel sequence that will cause uncertainty about what will be perceived next, teachers could assemble things that do not belong (Michalko, 2001), lateral thinking (DeBono, 1970), or play (Berlyne, 1969) in the learning sequence. Teachers may tailor the examples provided in the booklet for their purposes of teaching.

Mary contemplated on the preparation of student teachers and professional development activities for in-service teachers. She did not think that the booklet contained useful strategies for these two populations of teachers. Perhaps, Mary placed herself along with teachers who are undergoing initial preparation or an in-service teacher who is attending one day of professional development. After listening to Mary about her dispositions to teaching, what I envisioned that had to happen was a one-to-one coaching and mentoring in designing the learning sequences, using *situational factors* and the *collative variables*. This nurturing was to take place in a trusting and caring environment. However, intervening in Mary's thinking was not my original purpose of this research. My purpose of research was to simply experiment with *situational interest*

factors and the *surprise, complexity, ambiguity, novelty, change, and indistinctness* in Mary's classroom. I needed someone to design lessons that incorporated the variables and then implement them so that I can observe whether or not there is link between *situational interest* and student learning. Simply put, I needed a classroom and a teacher to experiment with what I had in mind. My focus of research was the students' *situational interest*, not the teacher. Because this was the focus, this research had been remiss in a providing Mary with more meaningful professional development to accomplish this research aim.

Mary was predisposed to think the booklet contained "ivory tower stuff." She saw it being "too deep in terms of what people are doing—the connections they are trying to make in terms of their actual lessons." Rather than providing teachers with tools to create their own ideas for lessons, Mary believed that teachers like to leave with real "practical things, not ivory tower stuff." It was explained to Mary that if we were working with novice teachers we would not simply hand them this book. Rather, we would use the divergent perspectives in the booklet to get educators to think about content in alternative ways.

Mary invited my assistance. She requested, "Will you come up with ideas for the first few to help me (TTRC)?" Because Mary did not feel comfortable with the materials I had provided for her to design the lessons, she required me to provide examples and assist her in designing the first few lessons. She was assured that I would be there to help her come up with ideas throughout the study, but she would have to implement the lessons. I added, "I am going to ask you to first try to create activities according to the variables on your own. We will then discuss your ideas, and I will try to augment your thinking" (TTRC) I explained to Mary that I wanted to see how she interpreted the integration of situational interest variables--*surprise, complexity, ambiguity, novelty, change, and indistinctness*--in designing learning sequences. The

research is taking a twist, putting the ownership of designing lessons on Mary and focusing more on Mary's interpretation of the integration of situational interest into her lesson design. Mary said, "Again, this is all new material. And I am still, you know—new. How did you approach Chapter 12? (TTRC). Mary admitted again stating her inadequacy with the content. Possibly, this is the message she had been conveying to me right from day one by raising issues that teachers normally raise. In hindsight, I should have simply sat with her and developed and implemented the lessons collaboratively, without making judgments on her ideas, and being slow in pushing my ideas. She even asked how I would design learning sequences for Chapter 12. Prior to the planning stage of the study, we had both agreed to read Chapter 12 and come back with ideas for designing lessons using *surprise, complexity, ambiguity, novelty, change, and indistinctness*. This is what we needed to have done. But the sequence of events did not play out in this manner.

She was told, "Like we will be doing in this study, when we first embrace content, the very first thing that would be done is to go through and identify themes in the content that we see emerging." (TTRC) I went to my notes and explained to her that Chapter 12 was an exciting time in history--"In Chapter 12, the themes that emerged from the content were suspicion, racism, isolationism, labor unrest, exploitation of labor to assure big profits for business owners, mass production in manufacturing like the Model T, urban sprawl, and electrical convenience. Now advertising is playing an important role in marketing, people are buying goods on credit for the first time, and that the introduction of machinery is impacting farmers and employment." (TTRC) I stated and scribbled some of the themes on her white board. What is done after the themes are identified is described in the next excerpt:

Once I identify the themes, I then draw out a concept map and place the main events, relevant quotes, or pieces of primary sources cited in the textbook under

each theme. For instance in Chapter 12, there was the Red Scare, the Palmer Raids, the KKK, the Ohio Gang, Calvin Coolidge, and Hoover, just to name a few. A quote that I picked out was “The man who builds a factory builds a temple—the man who works there, worships there” From here, I extend the concept map out to a “Then and Now” or what personal meaning this would have to the students. This always gets me thinking about how the material relates to the students. Next, I ask how I can incorporate affect with the collative variables to make the information meaningful and engaging to the students. This is where the book that I gave you comes in. To get me thinking outside of the box, I look at the themes and the events; then, I use the questions in the “Creative Enigmas of Heraclitus” (Von Oech, 2002) and the Trigger Questions for Synectics (Gordon, 1961) to help me design activities that would fall under one of the situational interest elements--*surprise, complexity, ambiguity, novelty, change, and indistinctness*. Next, like a musical composition, I divide my hour. I immerse the students in various activities, moving unexpectedly from crescendo to rest. Once I have the idea for my activities, I go beyond the text to give the “uh-oh” moments related to what we’re talking about to make it more interesting. Then, I identify situational factors to accomplish this. (TTTC)

First the themes or big ideas are generated in a chapter. Second, a concept map is constructed to visualize the conceptual path. Third, the “Then and now” strategy is used to display the key players and events. Fourth, analogies are identified to draw parallels between events from then and events from now. Fifth, personal *relevance* is drawn—this is noted on the chapter concept map. Sixth, affect is incorporated. Seventh, *situational interest* variables--*surprise, complexity, ambiguity, novelty, change, and indistinctness*—are integrated to meaningfully engage students.

To incorporate the variables into lesson design, we examined the suggestions in the book that had been developed for the study. I use the questions in the “Creative Enigmas of Heraclitus” (Von Oech, 2002) and the Trigger Questions for Synectics (Gordon, 1961) to help me design activities that would fall under one of the *situational interest* variables--*surprise, complexity, ambiguity, novelty, change, and indistinctness*.

Next the hour is divided according to the activities or the *situational factors* like *hands-on* or *social interaction* (Bergin, 1999) that I will use in the design. The “Uh-oh” Moment” is

also integrated into the lesson for *surprise*. An “Uh-oh Moment” is an event in social studies where everything goes wrong. For example, when George Custer realized that the choice of his battlefield was not geographically sound. It is in the dissonance that is the make-up of unsound thinking that the bell rings most clearly in thought.

It was explained further to Mary how we should approach creating a learning sequence. A blinding snow was falling between us. I saw worry biting her cheeks. Like belief systems are shaped by the contextual influences of different cultures, there was tension between the contextual influences that had shaped both of our lives and our learning experiences. I was concerned about the amount of time and work that would be involved. After all, Mary raised such issues earlier on. I was single—a woman without children. I had time for such lesson design, but she had a husband and children. Disparities were huge how we approached lesson design. Reflecting on my conversation with Mary, I wrote in my journal the following concern:

Few teachers design lessons like Posner and Rudnitsky (2001) advocate; yet, so much college class time is dedicated to such programmed design. I don't subscribe to Posner and Rudnitsky's approach to lesson design. As far as I'm concerned, the approach is organized complexity that distracts teachers from “getting to the point” in meaningful lesson design. The layers of processes or their components of lesson design—values, educational goals, rationale. ILOs, flowcharts, concept maps, instructional plan, outline of units, teaching strategies, evaluation plan, actual learning outcomes, educational results—teachers don't do this to design their lessons. Although such curricular processing does have merit, teachers are not buying into the value of the end product or the time requirement that is involved—but why do colleges pretend that this is reality? If such a mechanistic process is used by teachers and it is working, why isn't there more evidence in schooling? Isn't this the mentality that is driving teachers back to teaching exactly how they were taught? Why can't the starting point for lesson design be engaging student interest and relevance? How would schools be different if such affect was behind the design of every lesson? Reality, however, is that student teacher who was telling me that she was “... doing sections 2, 4, and 6 in the text book.” (JE)

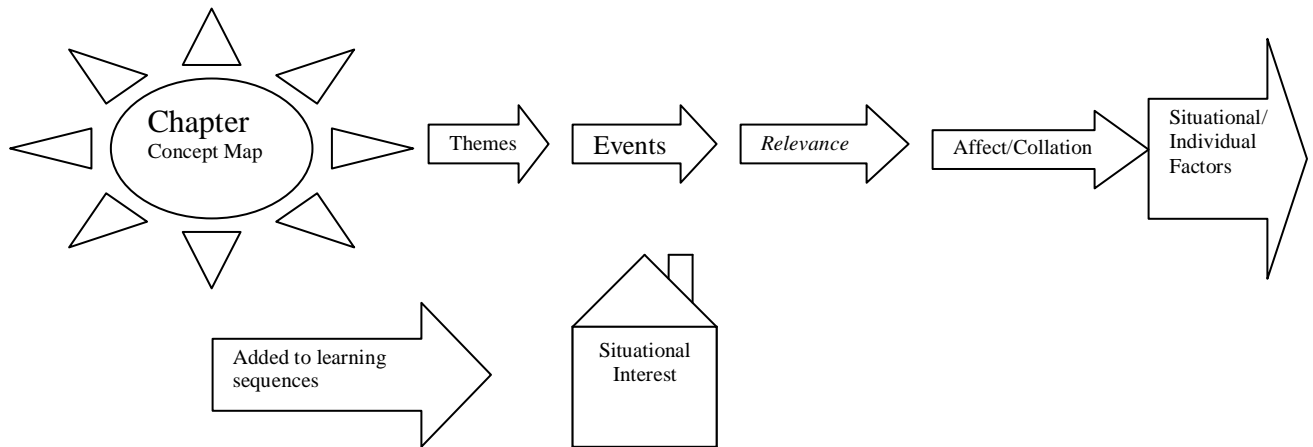
The excerpt depicts the belief that few teachers design lessons in the way proffered by Posner and Rudnitsky (2001). The mandates placed on teachers provide little time for such “programmed design.” I see their approach to lesson design as organized complexity that is aimed at improving test scores. Such a “mechanistic process” has merit in organization of curriculum but distracts teachers from designing lessons that would engage *situational interest*. Further, the journal entry depicts the belief that I believe that universities are fooling themselves if they think that teachers design their weekly learning sequences with *values, educational goals, rationale, ILOs, flowcharts, concept maps, instructional plan, outline of units, teaching strategies, evaluation plan, actual learning outcomes, educational results*. In “reality,” teachers are “... doing sections 2, 4, and 6 in the text book.”

There are not only contextual differences that shape our lives, but there is also tension in the differences of how contextual influences are exercised by teachers in students’ learning experiences. Winter in the old neighborhood was settling into my own thinking. I pondered how Mary designed her learning sequence, particularly focusing on Mary’s statement: “I do try to get the kids to do some reading on their own (TTRC).” or “I usually give them a lot of notes and have them go through them, usually on the overhead. I try to break everything up so it will make sense so the kids can learn it” (TTRC) Or “I take the overhead notes that I give everyday and see what kind of activities that I can use to re-enforce this. I look through things, and I look through the stuff and the text book and quizzes and worksheets and stuff like that—you know like MEAP strategies, and see if there is anything good in the chapters.” (TTRC) I knew that I was expecting Mary to participate in thinking that was outside of the old neighborhood.

I drew a less visually enhanced schematic diagram of my mental processes in lesson design on her classroom board. The individual factors of affect and *relevance* and *situational*

factors (Bergin, 1999; Schraw, Flowerday, and Lehman, 2001) were added to the *collative variables* to create the lessons in the learning sequence in my diagram.

Table: 4.1 Conceptual Map of Approach to Lesson Design to Create Situational Interest



Looking at the schema, Mary asked, “Are you trying to engage the interest before you teach them some of the material?” (**TTRC**) Mary was curious at what points in the learning sequence that I would be trying to elicit *situational interest*. I responded that I wanted to engage students not only at the beginning of a unit but also throughout the learning sequence.

I want to see if what we were going to design was engaging interest; then, we will view the students on the videotape to see if we are holding their interest. Are we seeing the students’ interest fade—we know from research that, because they are 15 years old, in 15 minutes they are going to fade out on us. Once we see them fading, what I want us to do is to go back and punch the learning sequence again with another piece of novelty or surprise or another variable. Then, using *surprise, complexity, ambiguity, novelty, change, and indistinctness* to guide the activities on the chapter concept map, we’ll punch the learning sequence again. At the end of each class, we’ll do consesograms to check their perceptions. We’ll survey them to discover situational factors. Daily, we will study the data, record

our observations of categories that we see emerging, and keep adjusting the learning sequence until we see the interest holding. (TTRC)

For experimentation of lesson design, the classroom activities captured on video tape must be viewed together. If students are experiencing *situational interest*, we must be ready “to punch” the learning sequence with another variable. Students must be continually surveyed for their feedback to make adjustments to the learning sequence. Categories needed to be constructed from the field notes. Mary needs to have a clear overview of the events that will shape the study.

“Do you want each one of these to be an anticipatory set or each one of these things just to be a novel approach?” Mary asked. I gathered from her question if *surprise, complexity, ambiguity, novelty, change, and indistinctness* would be limited to an anticipatory set. This reminded me of my reflection I recorded in my journal based on the conversation I had with an expert who designed science lesson sequences. I shared the content of the journal entry with Mary.

Originally, when I was doing only a quantitative study, I had made a case for an instructional set; but after Dr. E. questioned my wisdom in my choice of research methodology, I saw the error of my thinking. Now, doing this qualitative study, we can let the study take us to the truth. We’ll start with just using the variables in the instructional set and see what happens. We’ll see if interest was caught, and if it was, we’ll look for evidence of it being held. Then, we’ll keep adjusting activities throughout the learning sequence until we see the students’ interest caught or triggered and held. (JE)

When the study was first conceptualized, it was only going to test the collative variables in an anticipatory set in a quantitative study. A very knowledgeable member on my doctoral committee convinced me that this study needed to be expanded to the entire learning sequence, using a qualitative methodology. There was wisdom in what she stated. Being convinced of the expert’s counsel, it was exciting to share with Mary some of the ideas for Chapter 12 that could

be used in the study. I was exuding the enthusiasm and my mind was spinning with ideas about the content. I like thinking about ways that children can construct content knowledge. When we think about ideas for activities, we need to think about Synectics—*disturbing, distorting, animating, superimposing, changing scale, disguising, prevaricating, and analogizing* (Gordon, 1961). Because I have been doing this research, I ask myself how I can use these divergent perspectives to design a lesson to discern if these situational factors can be combined with *surprise, complexity, ambiguity, novelty, change, and indistinctness* to encourage *situational interest*.

I looked down at my map of the chapter and said,

Let me give you some examples of how I would do this if I were teaching this, okay? This chapter is replete with economics. The first thing I would do is create an economic map of the chapter, extracting the themes and key ideas. From these, we'll create dilemmas or scenarios using the collative variables. So the kids are able to visualize the economics—they have to see it. We'll have certain kids get up in front of the room and hold different placards that will be our props in the economic conflict. This will create surprise or ambiguity. Each student will represent different parts of the economy during this time period. On the placards, we'll have statistics. Now, we'll move them round like chess pieces to show different sides of the conflict. We'll ask them to answer a dilemma pertaining to the conflict. This way we can check their perceptions for understanding. (TTRC)

Being an economics and government teacher I was drawn to the economic theme of the production of goods in Chapter 12. Creating a dilemma that represented a conflict in the time period and having students' role play aspects of the dilemma seemed sensible. By giving students parts in an economic problem, it would cause them to appreciate the value of the roles of the economic concepts during this time period. Mary remarked, "When I think of this chapter I don't necessarily think just economics, the second part, sure, but the first part of the chapter I am thinking of more of the historical aspects." (TTRC) Mary questioned why I rushed to the

economic theme in the chapter, and why I was taking things out of order. I quickly responded as follows:

I am not putting the activities in order in the chapter. I am just looking at themes and putting the ideas for the activities down as they occur to me. To teach them the role of advertising, I have some old Life magazines from that time period at my house. We'll do a "then and now," using advertisements from back then and now. To create a gap, we'll white out pieces of the advertisements. We'll put the students in pairs and move them around from station to station. Each station will have an advertisement from then and one advertisement from now. Students will have to fill in the gap and evaluate differences, using clues from the advertisements. We'll ask them what they know about the two periods in history from what they observe in the advertisements. They must justify their thinking with evidence from the advertisements. (TTRC)

My mind was a freight train filled with ideas for activities that we could do to get the students involved with the content. Rather than having Mary be responsible for creating the activities, I thought of Bandura and decided that I needed to model how the elements of situational interest--*surprise, complexity, ambiguity, novelty, change, and indistinctness*--could be integrated with situational factors and the content of Chapter 12. I felt that if I modeled enough ideas for activities that Mary could observe the method of my approach. It may, however, have been just a convenient excuse to allow for my impulsivity. Hence, in the name of sound research methodology, I chose to continue to model the lesson design and try to nurture Mary's ability to create the activities using the collative variables later in the study.

Checking the notes on my concept map, we shared some other activities that were generated from the themes.

Here's another activity that I thought of—isolationism is a key theme at the very beginning of the chapter. We'll get 4 or 5 brown paper bags and put them in front of the classroom (*surprise*). Each bag will represent a different country. In each of the bags, we'll put pictures of the natural resources that we get from those countries that are not available here. The kids need to experience the content in the environment. They will be more engaged when they get to see the content through their senses (*hands-on*), and what these things mean. If they are able to experience decision-making in isolationism, they'll get more excited about it. The

resources in the bags will be a surprise. We will watch on the video to see if they are intent on discovering what resources are coming out of the bags.

Before you call their attention to the bags, talk a little bit about isolationism as an economic strategy (*essential background information*). Then, take the contents out of the bags, one-by-one, and have them decide if this country can live without this product. Talk about the benefits and consequences of isolationism. Once you see that they understand, then, you can ask them, can we afford to go back to an isolationists approach today—ask them if we can afford to lose our dependence on foreign oil. Tomorrow, we could bring in the bags. It is very simple. You'll need a little help to cut out the resources and put them into each bag. Then, they can see what things we get from India, from the Middle East, from China, as you take out a picture, one-by-one. It will help them understand trade and dependence. We'll stagger the bags around the front of the class like the countries on an atlas. In a journal entry, to check their perceptions of isolationism, we'll ask them how isolationism impacts employment. We'll know by their perceptions if they understand. (TTRC)

On the concept map of the chapter, I had identified isolationism as a theme. Paper bags were used as a medium to create *surprise* in the environment and aspects of the content. The study desired to see if the students would show on the video tape that their attention was held and if their expressions would demonstrate a “wanting to know” what was in the bags. The bags would be used to trigger higher level thinking by moving from the benefits and consequences of being an isolationist country to having the students value the cost of this economic stance to the students' ability to attain jobs. Mary was apprehensive with the ideas. She responded, “I don't know—I am interested to see. Do you think it will engage all of them? I think it will only engage the thinkers.” (TTRC)

Mary felt the higher level thinking would disengage the special need students. It is this thinking that guided more medium and lower degree perturbations in the study.

I remarked:

You have to bring it to all of them! We have to look at our students. They are pre-job. So you start out asking do you want a job. Why are jobs important? Have them take out immediately their money and pile it on their desks. Say “Now, if you don't have a job, will you have much to count there.” What I am talking to

you about is using the *unexpected* and *relevance*. Bring them in, but you have to go to them! They are going to want to know what is in those bags—it is the surprise element. And, one-by-one, they will all want to know what resources we get from that country. Get them thinking about what will happen if we cut off trade. We'll watch to see in the video if it engages their interest. I always say this, it's not the "Aha-ha" moment; it's the "Uh-Oh" moment. That makes it more interesting. Find those moments in outside sources. Throw it into the mix! Students love to hear about how geography was the downfall of Custer in his last stand or how in the Battle of Stalingrad that Hitler's commandants forgot to tell them it was cold there! Whenever we can do that and put that into the lesson that's wonderful. Can we start with that tomorrow? (TTRC)

This excerpt seeks to point out to Mary the study was heading. If we select themes and situational factors that are appropriate to all students and the teacher designs the learning sequence with *surprise*, *complexity*, *ambiguity*, *novelty*, *change*, and *indistinctness*, all students may be more likely to experience situational interest. For instance, if we take a theme such as "jobs", an activity filled with *surprise* or the *unexpected* and *affect* must be developed. For example, having students pile their money on the desks, and use these props to engage interest in thinking about the content of economics is *novel* in this old neighborhood, situational interest will more likely to occur. For this to happen, however, teachers must plan lesson sequences with such variables in mind. Mary said, "I am not doing that tomorrow. I am doing that Wednesday. Tomorrow, I am doing the Red scare and the Palmer Raids and all that." (IT)

Mary began Chapter 12 with the topic on communism. She followed the material in the order that the content occurred in the chapter. She required activities to follow the textbook. When I heard that Mary was beginning with communism, I suggested to Mary that to kick off the study that we could do a "Duck and Cover" instructional set. She asked me what that was. I told her that when I was a child the schools used to make the children go through a drill where they made us put our hands behind our heads, climb under our desks, and cover. In my generation, this was supposed to be the students' immediate response in the event of a nuclear attack. I

explained that she could chart on the board how the Red Scare evolved over the years. I suggested that she brings in Dominoes to explain the “Domino Theory,” and tell them how the tunnel under the middle school is a Fallout Shelter—explain what that is. Then, have students go through the drill. This would be her open activity to teaching the Red Scare.

It was felt that the tactile/kinesthetic nature of the study group would be *surprised* by having the opportunity to reenact this real-life exercise that is a memory of many children who grew up in the fifties and sixties in America. It would use the situational factor of unexpected *movement*. I also thought that it would be *novel* to use real dominoes to teach the “Domino Theory”, where it was believed that one country after another would fall like dominoes to communism. Moreover, by pointing out to the students that there is a tunnel under our middle school that was designed to be used as a Fallout Shelter in the event of a nuclear attack, it would allow the students to experience the by-products of the Red Scare.

It was then pointed out to Mary that we could use the *emotion of suspicion* as the individual factor (Bergin, 1999) to foster *situational interest*. I had identified suspicion as an emotion associated with the Red Scare and the Palmer Raids. I asked her to think about the role that suspicion had played in history. It has motivated many historical courses of action. I mentioned that government suspicion is still motivating many political courses of action. I asked her if she had read the article in the paper about businesses hiring companies to track potential employees’ internet behavior. I explained that the article points to several female students who were in the top ten at either Yale or Harvard Law School and that they currently can’t get jobs because they posted pictures of themselves nude on “My Space.” “Ask the students how many visit “My Space.” Link the role of suspicion to this and the Palmer Raids. Bring in the Patriot

Act. If you connect all of these to the kids and get them involved, they'll stay with you (TTRC),” I said.

More examples of how to weave an individual factor such as *suspicion* (Bergin,1999) in and out of relevant moments--moments of valuing and moments that used *surprise, complexity, ambiguity, novelty, change, and indistinctness* to hold interest in the content of the theme were provided to Mary. Mary asked, “Do you want me to have some sort of journal about all of this?” (TTRC) Mary wondered if the journal question should relate to the theme of suspicion. I told her that she could check students’ perceptions of the lesson sequence if she had them write in their journals after she had introduced the “Duck and Cover”, the Red Scare, and the Palmer Raids. She could have students write about a time when their suspicion motivated each of them to take a certain course of action (*relevance*), and then ask them if they see any connections to events that resulted when a government was motivated by suspicion.

Again, the intent of the study was to understand how the collative variables, situational factors and individual factors such as *relevance* influence student situational interest in lesson design. I was trying to model to Mary how she could take an action that is *relevant* to most of the students—performing a certain action as a result of one’s suspicion—and having students make a connection between their incidents of action that were motivated by suspicion to those of the government that are motivated of suspicion. For instance, a student may provide the incident that he thought there was a suspicious person walking behind him and thought that this person was following him. To check or relieve suspicion, students may choose to follow a new path away from his original intended destination. If the person behind him continues to follow him, he may run, or pick up a stick, or confront the follower. Once each student provides an incident similar to the example provided, have students connect his/her incident to an event like what the

United States did during the Bay of Pigs or some other historical event that was motivated by suspicion. I believe that having a student compare/contrast personal actions to that of the government aids cognition.

4.5 Diffused Light in the Old Neighborhood

Mary and I agreed to meet the next day to finish planning activities for the rest of the week. Mary also agreed to take develop more activities and take ownership for the implementation of those in her classroom. The next day, we met again after school. First, Mary discussed with me how she will make use of paper bags and the situational interest variable of *surprise* to teach the concept of isolationism. In Mary's words:

Because you talked about keeping kids engaged, I'll have the kids come up and have a different person for each bag. I thought the way that I'd do it is have the person with the same initial as that country stand behind each bag, because if I had volunteers I always get the same kids—you know the brightest ones and nobody else ever does it. So, I thought I'd grab somebody with a C like Columbia (in his name). I'll figure something like that and have them come up and pull out the things out of the bag and talk about if we became truly an isolationist country this is what we would be giving up. (TTRC)

Mary expressed her wish to follow my notion of keeping students engaged. For Mary, to keep students engaged in the paper bag activity means not call for volunteers but match the first letter of the student's name with the name of a country marked on the bag. Mary believed this was a way to engage those students who do not normally volunteer in a learning experience. Her reasoning in her own words, "... if I had volunteers I always get the same kids—you know the brightest ones and nobody else ever does it." (TTRC) Mary's proposal was that she would have a student come up to the front and pull out a picture from the bag. Then, she would discuss the consequences or benefits of being an isolationist country. I observed a flicker of light in Mary's eyes. Mary exhibited excitement in how she would design the activity for engaged learning experience.

That Mary ensured connecting the activity to students' personal lives is embodied in the following excerpt:

Make sure that you always bring it back to the students, and ask them to make the connections as to how it would that would affect their lives. For instance, let's take coffee. What if we cut down on the amount of coffee we drink—how would that impact our country? Always bring it back to them. (TTRC)

To me the notion of *relevancy* in an activity was key to learning. I provided Mary an idea to make *relevant* (Bergin, 1999) connections to students' own personal lives--what if they had to live without certain products such as coffee due to a policy on isolationism? I figured that students will catch and hold *interest* when they are made aware of how public policy will impact their lives—live with either ease and comfort or pain and suffering.

Mary was eager to do “something” with students but concerned that they will not understand the meaning of communism, an overarching idea for isolationism. Mary seeking for my assistance is contained in the following excerpt:

Well I wanted to do something. These kids do not know what communism is. Well, I explained it to them, but I wanted to on Thursday, if I could—I have to think on this a little more and maybe you can help me on this. Well, I really talked about suspicion a lot today. You know, we talked about the Red Scare and the Palmer Raids and I wanted to bring communism back into it somehow. Because that was so important and they don't understand. And they said, “Oh, yeah! He's a commie” (TTRC)

Focused on my idea of suspicion to catch and hold *situational interest*, Mary pointed out to me that she really talked extensively about it; however, she was concerned that her students did not comprehend the meaning of communism. Perhaps, she did not want students' understanding of communism to be distracted by bias or discrimination. She felt students were assigning a stereotype without knowing what was meant by the political philosophy when they remarked, “Oh, yeah! He's a commie.” On the notion of communism, she explicated further:

I don't know if it was in 2nd or 5th hour today but somebody asked me "What is it exactly?" I told them "Well it's where everyone is treated equally. You know, nobody can own anything. The government owns everything." Another student asked "Well, how is that bad, necessarily?" I answered "Well, in some ways it is not bad—you know everyone is taken care of. (TTRC)

Mary informed me about students showing *interest* in the notion of communism. A student was curious about its meaning. When meaning of communism was conveyed as people are treated equal and no one can own anything, another student questioned the disapproval of communism.

Our conversation returned to catch and hold *interest* in students in the discussion of communism. Mary's request for help, maybe you can help me on this, reminded me of dominoes to visualize the influence of communism.

Bring in ten or twelve dominoes. Line them up on a desk in the front of the room. Flick the first one. Let them watch the others topple. Show how our government feared the "domino effect," how communism would overtake one country and then another country. Explain how the theory evolved into reality from the 20's through the 50's and 60's. Explain the basic principles of Karl Marx's theory of communism-- that's probably too heavy. Just talk to them about what Marx perceived would be the benefits of a state of communism, and then, explain what communism turned into in reality. Point out that, despite its oppressiveness, some say that communism was the best thing for China in terms for feeding the people. When you look at concepts with them, always look at the issue from all sides. Discuss the relevance to them—such as having a government where people lost their ability to make decisions about what they read, and their religion, make sure they see that.—at the same time, point out that people, who would ordinarily go hungry, were fed under communism. Do something in class to make them experience communism. (TTRC)

I sought Mary to employ situational interest by using a manipulative (dominoes), (*hands-on*) readily available in the classroom to draw analogy between the "domino effect" and the effects of communism. This was because I was opposed to Mary teaching the concept of communism by expecting students to copy notes from their textbook. While I alluded to the analogy, I failed to coach her in analogical reasoning—between the domino effect and

communism effect. I quickly jumped to providing students with an overview of how Marx viewed the benefits of a communist state as opposed to the direction it had taken in reality. I encouraged Mary to have students recognize or grasp the idea of communism from various points of view. Similar to winter when the ground is reduced to bare the essentials that are needed for the forthcoming of new growth, Mary was provided the fundamentals of how to teach communism.

Because Mary and I were now communicating about the direction that the lessons should be designed for this study, that is, to incorporate individual and situational factors and the collative variables, I took the opportunity to tell her to “seize” the moment” My voice about the variables of interest is depicted in the following excerpt:

Yes! Constantly seize moments of *relevance*, *surprise*, and *conflict*. Mary, that’s what I am always doing in my classroom. Whenever I see an opportunity to engage interest, I seize it. It is not always planned. When you look at lessons like these, it sometimes becomes intuitive. When it is unpredictable, students have no idea what I will be doing. They always are looking for my next move. What is that crazy lady doing now—you know, all the eyes will be watching to see where you are headed. Whenever you see an opportunity to do this in a lesson, seize it. Teachers must facilitate wonder. Once you understand what I am talking about, you are going to start doing this automatically— it’s like catching that fish! You know, you are bringing them in! You are bringing them in! Lure them in—make them chase ideas. Yes! Do that! Talk to the class about how well-intentioned political theory can become distorted when it is moved to reality. Ask them in their journals to describe a time in their life when something didn’t go as they planned—ask them how they felt when it doesn’t go as planned. (TTRC)

I persuaded Mary to use variables of situational interest--*unpredictability*, *relevance*, *surprise*, and *conceptual conflict*--to lure students into content knowledge like a fisherman intentionally lures fish into the boat. I asked her to build *relevance* to student lives through a journal assignment using scaffolds such as, “Like a political theory that doesn’t always go as planned, how they feel when a plan of action that they wanted to take doesn’t go as planned. What caused it to go in a different direction? Does the same happen with a political theory?”

(TTRC) This reminded Mary of a question that may result in a parents' confrontation. Mary reasoned, "Well, I want to be careful, I don't want to get any parent phone calls I had an issue with that." (TTRC) When I asked her what she meant, she replied, "Well, sometimes some things can get out of control." (TTRC)

Mary was apprehensive about stepping out of the safety zone that maintains the status quo in this old neighborhood. She was worried about parent phone calls. She was also uneasy about whether adjustment to how she designed lessons would cause loss of classroom control. This is an example of why some teachers do not feel comfortable to introduce active learning into their controlled classroom. Active learning requires teachers to monitor movement of students in class. Some teachers find it easier and safer to keep students in their desks, eyes fixed on the individual parting knowledge.

I assured Mary that students will enjoy these activities and that their parents will not be making telephone calls to complain. Parents are happy when children enjoy learning. Not yet completely convinced, Mary moved on to state what she had in mind. This unsettled feeling about our distinct agendas is clearly evident in the following excerpt because she introduced a new different strategy.

Okay, so we are doing the paper bag activity. After that, I need to finish up the things in section one. It goes through the Emergency Quota Act and the KKK. Now, what about the KKK—I thought about doing some type of T chart, talking about the difference with the KKK in the 1850's or in the 60's and now. (TTRC)

As opposed to what I insinuated Mary, was inclined to complete section one by having the students create a T chart of the Klu Klux Klan, a group that was devoted to being a 100 percent American or a white male native born gentile citizen. Not being familiar with a T Chart, I asked Mary to tell me more about this strategy. She explained that a T-chart was a comparison chart that would show who the KKK were targeting in the 1850's and who were now being targeted by

the KKK. I probed Mary how this chart was utilized as a tool for developing higher order thinking skills and *affective* learning.

Do the students do any valuing at all in the activity? Any *affect*? Does it cost them *emotionally* to think about what's going on with the KKK using this T-chart? Will they get to see—I guess what I am asking is will this tool lead to the students experiencing any kind of higher level thinking skills or will they be experiencing any affective values? And after the T-chart, where do we go from here (TTRC)?

My utmost concern was would this T-chart be used to target the individual factor of emotion. Mary had not addressed my questions about *affect* or higher level thinking. I was left with the feeling that she did not want me nudging her to use the T-chart for developing higher order thinking skills or *affect*. Perhaps, we do not agree that all students must be higher order thinking skills or affect. Possibly, her silence should have suggested to me that I needed to coach her to incorporate such elements in T-chart. The distinctive theoretical and contextual influences that have shaped us as teachers were becoming more clearly evident.

In my mind, I saw everything in a learning sequence as being connected. I have seen teachers assign merit to individual aspects of a learning sequence like Mary did with her T-chart and leave it at that. For some teachers, there is merit in taking notes for a while so students take notes. There is also merit in doing a comparison chart to reinforce the notes so the students do a T-chart as Mary proposed. I would have preferred Mary to use the learning tool or event such as T-chart to engage students in the construction of knowledge with emotional interest. For example, what if the students were asked to do a T-chart that showed the likenesses and differences between the KKK and an organized religion, for example the Catholic Church. The students would have the opportunity to make relationships between two divergent groups, the

KKK and Catholic Church. It is the *novelty* that the KKK and the Catholic Church have elements in common that will catch and hold the *interest* of students.

The students could establish that both groups involve costumes and/or they both assemble in the name of an agreed upon doctrine or that both groups have a hierarchy that convinces the membership of a behavioral direction of action. When this was done, students would identify the differences—such as the KKK has used an assembled group to violently target people of color or people who worship God differently from a protestant perspective. Although often segregated, the Catholic Church invites people of color to assemble to worship God. Once a list of differences was drawn, the students would be asked to draw inferences from the relationships that were established. Would this not create more emotional *interest* than a comparison of the KKK’s activities between the two time periods? It is this emotional interest that engages students in learning and makes the content stick in memory (Wolfe, 2001). A teacher must discern how all aspects of a learning sequence work together to create an *emotional* cost to the student. It is *affect* that triggers the greatest cognition and incites students to draw greater relationships. When students are able to see likenesses between what appears to be highly divergent groups, stronger insights are made with content.

I did not push Mary about the T-chart. I let the comparison chart just be a comparison chart. Mary continued with where we would go from there.

Then, we start talking about what it means to be 100% American. You know, who the KKK was targeting and what they were going after after WWI and what attracted people to be a part of that. And then I go into immigration here. Do you want something with immigration? (TTRC)

Mary appeared to grant my wish to include the concept of immigration. “Yes, you know what I was thinking about,” I replied. (TTRC) Mary remarked, “Hard telling.” (TTRC) We both laughed, acknowledging the insight of the wit of her remark. Although I let go of the T-chart, I

was going to use immigration activity to use *novelty* and *ambiguity* to get students to value which groups would best benefit the common good by allowing them to come into the country. From my notes, I vocalized what I had in mind for the lesson on immigration:

Well, you know the boxes that paper comes in—we'll take one of those and we call it the "immigration policy box." In this activity, together as a group, the students will be creating public policy on immigration. Scattered around the box on the floor in the front of the classroom are cards. Written on cards on the floor will be different controversial scenarios related to immigration. Select a student to go to the front of the room. The student will choose one of the scenarios on the floor. The students in their seats will offer proposals to resolve that scenario related to immigration. Here are some examples.

No one in America wants to pick carrots for our farmers. People from other countries are willing to come and do this work. Through majority rule, the students will vote by raising their hands whether they will allow people from various countries in to do this work. If the class does let them in, they will then set a quota. Discuss the Emergency Quota Act. Explain to the students they will now be setting their own quotas. Are they going to let people in from different countries to pick carrots—yes or no and have the students explain why or defend their position. Do a scenario with medical doctors. Explain the benefits and consequences by allowing medical doctors to come from other countries. Do a scenario with college professors and one with astronauts. Do one where family members are here. A person has brothers and sisters here—is that going to weigh in? Should they be picked first to come in?

You create instances. The kids have to decide for themselves. The student in front of the room will write their policy on the back of the card and slip it into a slit in the top of the box. At the end of the activity, take out all of the cards and write the policy on the board. Use this as a springboard to discuss immigration then and now. Discuss the consequences and benefits with immigration. Bring it back to relevance. You know, the problem with jobs, outsourcing, the decline in unionism—jobs that can be done over the Internet. What role does population play in job security? What role does it play in immigration? List on the board the causes that make people illegally immigrate to another country. Have the students use this list to write a journal entry from the eyes of an illegal immigrant from the USA, who has fled this country to go to Canada to escape the horrible economic conditions that prevail here. We have so many illegal immigrants in this school. This will require the others to tell their story in their own shoes. I also want to do a three questions consensogram from the situational interest survey to see the students' perceptions of situational interest. (TTRC)

The idea is to create *conceptual conflict* in students so they take a position when constructing their immigration policy. By having students create their own policy on immigration, it would allow them to create their own quota act. This would be used as a bridge to understanding the Emergency Quota Act. We may progress from this activity using *surprise* to the consequences and benefits of immigration, to the reasons why people illegally immigrate, and to a journal entry why each student would flee as an illegal immigrant to Canada. This learning progression will trigger and hold situational interest. Mary said, “Okay, we’ll try it and we’ll see.” This is another instance where Mary does not hesitate to try something *novel*.

I provided Mary the timeline of activities (see Table 4.2) and asked her to review it.

Table 4.2: Timeline of Activities for the First Week of the Study

Date	Tuesday 3/20/07	Wednesday 3/21/07	Thursday 3/22/07	Friday 3/23/07
Activity	“Duck and Cover” Communism My Space	Bags” Isolationism Consensogram T-Chart KKK	Immigration box” Ticket out the door Interest survey	Picket sign Activity Unionism
Collative Variable	Novelty	Surprise Novelty	Ambiguity Novelty Surprise	Surprise Novelty Ambiguity

Mary reviewed the order of the activities for the week as indicated in Table 4.2. When I suggested that she waited to do the immigration activity until Thursday, Mary replied:

I think I’ll do that. I could give them their vocabulary for something for them to get started on and then start on the immigration quota thing on Thursday. I think that would be a good thing to start on. Then, I’ll give them the notes tomorrow and then review them. On Thursday, we will read the journal situation and on Friday, I am going through strikes and unions and the picket sign thing. Okay! So on Thursday I am starting out the class with the journal, then the immigration box,

and then go to unions on Friday and end the class with the picket sign thing.
(TTRC)

Mary was not reluctant to try out the immigration box activity. I reminded Mary that we need to reflect. We ought to stop more often and create ways to observe what students understand and do not understand. Mary suggested “a ticket out the door”. I assumed that it is necessary to identify more opportunities in the learning sequence to check students’ perceptions of their understanding. The ticket out the door was an excellent idea I realized. Here is piece of evidence where I as a researcher coming to acknowledge a teacher’s idea of development of understanding.

Mary said, “So I think sometimes the ticket out the door can be a half sheet asking a question, and other times, it can be an oral question at the door, like what’s the Red Scare, and they can answer—tell me what the picket sign thing is again.” (TTRC) Mary’s idea to check students’ perceptions was to ask students to provide feedback with respect to the definition of a concept. I wanted opportunities to look at students’ conceptualizations of a social phenomenon such as immigration. I decided to wait to integrate more of my ideas as we moved along in the study.

The last activity of the week would be an activity to teach the rise of unions in the United States. I briefly shared with Mary how the activity could be designed with the collative variables and the individual and situational factors to stimulate situational interest in the part of the section in the textbook that dealt with the abuses of labor.

We’ll use 10 rulers to make picket signs. On the rulers, we’ll have posters that will have real issues of the abuses that the workers were facing on the job (*novelty*)—have your student assistant make up the little picket signs. Begin by reading the excerpts from “The Jungle” that I gave you (*surprise*). Then, write the ten issues\abuses on the board that the laborers faced at this time period. Show how such abuses in the workplace gave rise to unionism. Explain the platforms of unions then and the platform of the UAW now. Also, point out the family

economic issues facing the middle and lower class at the time (*sufficient background information*). One-by-one, ask the students how many of them would refuse to report to work and would come up and pick that picket sign to protest that abuse (*hands-on*). Make sure they understand that they could be fired for their decision. Ask those students who would be willing to risk their jobs to protest to raise their hands. Create a method to select one of those students to come up and hold up the sign. Next, ask the students who would not pick up a sign to provide reasoning as to why not. After you have go through all ten issues, choose one student from of the pool of students who would not be willing to give up their job to protest to come up and attempt to cross the picket line to get into the workplace (*discrepancy*). The students on the picket line must now vote by a show of hands whether or not to stop the worker from entering by force or allow him to cross the line. Discuss with them their choices. Then, have everyone be seated. Now, that's "then." Now, when you are done with that, you'll collect those picket signs, and you have new labor issues from "now" (*relevance*) written on another corner of your board. Select five students to volunteer to represent the labor issues from other countries. For instance, Martine comes from China and he'll work for a dollar day without benefits. Sam is from India and he is an engineer who will work over the internet for \$10,000 a year, without health care. Carol is from Vietnam and she'll work even cheaper. One student will be from Mexico, who is asking the businesses to move to their country, promising no taxes (*surprise*)—now, ask the students who would be willing to come up and pick up a picket sign and how many now would try to cross the picket line to save their jobs. (TTRC)

To model how to add the collative variables and the individual and situational factors, I outlined the picket sign activity for Mary. The learning sequence was a *hands-on* activity. Vivid excerpts from the book *The Jungle* were added to see the impact *novel* and *surprising* information would have on the students. When I asked Mary to "Explain the platforms of unions then and the platform of the UAW now. Also, point out the family economic issues facing the middle and lower class at the time." I wanted to observe the impact of the situational factor of *sufficient background information*. The situational factor *discrepancy* is added to the learning sequence when I have the worker cross the picket line to enter the workplace. To incorporate *relevance* the activity uses a "Then" and "Now" theme. *Surprise* is added when a worker from another country is willing to take jobs and work for less. The learning sequence is ended with *affect*, by asking the student if they would cross the picket line to save their jobs. I wanted Mary

to see that by adding these situational interest variables that we were better able to observe if the variables influenced the students situational interest.

Mary interrupted, “So, now, I am going to have a sign over there for the factory, and then I’ll have a couple of signs that say “I am from China and I’ll work for cheap” and one that says “I am from Germany, and I’ll work without benefits—right?” (TTRC) “Yes!” I exclaimed. The preceding statement is evidence of Mary being in agreement with my suggestions for creating situational interest on the topic of labor force/abuse with the picket sign activity.

I went on to share with Mary my perceptions about what needed to happen and why.

This will take it to what is really going on globally, and it will hit home with the lesson. We have to get them where they are experiencing the content with their senses, with an element of *novelty*. This will be a great activity for the tactile and kinesthetic learners. What is important for them is that it is just not notes from the book, but bringing the content alive with activities that engage them. Having so many boys and special needs students in this study, this will be important in capturing their interest.

(TTRC)

This excerpt demonstrates how I was attempting to intervene in Mary’s thinking the importance of using the situational factors and collative variables to create situational interest in tactile and kinesthetic learners. I was suggesting to Mary that we needed to make the content alive, rather than note taking, to influence the students situational interest.

4.6 Chapter Summary

The importance of this chapter is to demonstrate the role that critical disparities in pedagogical practices have in research that emphasizes the use of Belyne’s collative variables and Bergin’s situational factors to design lessons to engage student situational interest. The unfolding of the combined pedagogical dispositions and disparities that were compared and contrasted in this chapter serve as evidence that teacher change is a critical consideration in research that explores lesson design that fosters student situational interest. When the study first

began, situational interest was compartmentalized to “a psychological state of being interested in the activity” (Chen et al, 1999). As I become immersed in this study, I now see that situational interest cannot be examined by placing such limitation on this construct. All of variables and factors that encourage this “psychological state of being interested in the activity” (1999) must be included in the construct of situational interest in lesson design. Further, meaningful professional development to promote a better understanding of the collative variables and the situational factors must be included in the design of such a study. Hidi and Baird (1988) define situational interest as responses to environmental factors that promote interest in a particular context. The question must be asked—can the responses to environmental factors be understood without knowledge of the factors that influence the response?

From this standpoint, lesson design that promotes student situational interest must be understood holistically. The pedagogical approach that orchestrates the environmental factors that foster situational interest must also be included as part of this understanding. Even more, the *collative variables* and *situational factors* that encourage situational interest must be clearly understood among educators as interdependent factors in lesson design that foster situational interest. Most importantly, the evidence from this research question supports that the teacher’s pedagogical inclination must willing, ready, and able to support the *collative variables* and *situational factors* that promote situational interest in designing lessons.

If research such as this does not meaningfully prepare teachers to be inclined with open dispositions to create lessons that foster the affect of student situational interest, these lessons will never take place in these classrooms.

In the pursuit to discover situational interest in research, the old dispositional pedagogical differences from the old neighborhood must melt away.

CHAPTER FIVE

SPRING IN THE OLD NEIGHBORHOOD: SPRINGING OF SITUATIONAL INTEREST

5.1 Introduction

Darkness of winter melts away in the spring. Light captures our senses. The air freshens with the promise of new life. Warmth embraces all. Renewal is cradled in the intense colors of the landscape. Likewise, with life anew, *situational interest* springs forth and grows in the classroom when Mary implements a specially designed learning sequence on *Life During the Twenties in the United States* for six weeks in a 10th grade social studies class. The blossoming and growing of *situational interest* in the learning sequence captured a better conceptual understanding of situational interest is in Chapter 5.

Data sources of classroom *situational interest* are as follows:

1. Verbatim transcripts of audio-recordings of our planning conversations (PC)
2. Verbatim transcripts of video-recordings of classroom events and interactions (VT)
3. Verbatim transcripts of audio-recordings of six weeks of twice per week “Think-Aloud” sessions of our conversations and interpretations about Mary’s decisions and actions of her lessons (TALS)
4. Students’ “Ticket-Out-of-the-Door surveys (TODS)
5. Verbatim transcripts of audio-recordings of My Interviews with Students about their sense-making of the lesson sequences (MIS)
6. My journal entries (JE)

Several variables depicting *situational interest* were inductively constructed from the above sources of data. Pieces of evidence that reveal the budding and blooming of *situational interest* in the classroom just as the bud blossoms into a flower in the spring were selected from the data. Further, a clear light is shed on the variables that foster *situational interest* and supporting evidence depicted in Chapter 5 vividly portray spring in the old neighborhood.

The following table represents the collative variables and Bergin's situational and individual factors that were grounded in each activity in the learning sequence and the dimensions that emerged from the data and are illustrated in Chapter Five (see Table 5.1 on following page).

Table 5.1: Situational Variables Related To Student Situational Interest in Study

Learning Sequence	Berlyne's Collative Variable(s) Used	Bergin's (1999) Situational/Individual Factors Used in the learning sequence	Straw, Flowerday, Lehman (2001) Situational factors observed in the learning sequence	Chen, Darst, Pangrazz's (1992) Dimensions Observed in the learning sequence	Study Group Individual Factors that emerged	Study Group Situational Factors that emerged	Study Group Dimension of Situational Interest that emerged
Duck and Cover	Novelty,	Social Interaction*	Students wanted more Sufficient Background Information	Novelty, Instant Enjoyment		Unexpected Physical Movement	
Isolationism	Novelty and Surprise	Humor, Relevance, Hands-on Social Interaction, Modeling		Interest Instant Enjoyment and Attention		Unexpected Physical Movement, and Analogy	
Immigration	Novelty and Surprise	Social Interaction, Relevance	Students wanted more Sufficient Background Information	Instant Enjoyment, Attention, Novelty	Teacher feeling safe with perturbation, Competence		Engagement
Rise of Unions	Novelty and Surprise	Affect, Emotion, Hands-on, Social Interaction, Discrepancy	Meaningful Choices, Sufficient Background Information	Attention, Exploration Intent, Interest, Instant Enjoyment, Challenge, Novelty			
Automobile Activity	Ambiguity And Surprise	Hands-on, Social Interaction, Puzzle, Discussion, Relevance	Students wanted more Sufficient background Information	Attention, Exploration Intention		Logistics of a learning sequence	
Electricity Activity	Novelty and Surprise	Relevance, Affect (emotion), Humor		Attention, Instant Enjoyment, Exploration Intention, Novelty	Involvement	Movement	Engagement
Advertising Activity	Ambiguity, Novelty, and Surprise	Food, Social Interaction, Movement, Hands-on, Discrepancy, Discussion, Relevance	Sufficient Background Information	Attention, Novelty	Student Behavior changes,—more participation, more involved in discussion, more assignment Completion.	Movement, Primary Sources	Engagement Listening to each other
Model T Activity	Surprise, Novelty, Ambiguity	Social Interaction, Movement, Relevance, Belongingness, Affect, Emotion, Game, Modeling.	Sufficient Background Information	Attention, Novelty Instant, Enjoyment, Interest	Takes the content seriously Belongingness	Involve every student. Real life experience. Have a common goal. Movement,	Engagement
History Basketball	Novelty and Surprise	Social Interaction, Hands-on, Game.	Sufficient Background Information	Novelty, Instant Enjoyment, Interest	More participation than normal Belongingness	Movement	Engagement,
Value Road		Social Interaction Relevance, Hands-on, Game, Modeling, Discussion, Discrepancy, Belongingness	Meaningful Choices	Novelty, Instant Enjoyment, Interest, Attention,		Having Everyone Involved, Movement, Easiness	Engagement
Capone Movie	Novelty and Surprise	Novelty, Movie	Sufficient Background Information	Interest, Exploration Intention, Novelty			
Car Race	Novelty and Surprise	Social Interaction, Game,	Sufficient Background Information	Novelty, Instant Enjoyment		Having Everyone Involved, Movement, Prize	Engagement
Jigsaw	Novelty, Surprise Ambiguity	Hand-on, Social Interaction, relevance, Discussion, Lack of Modeling	Meaningful choices, Sufficient Background Information	Novelty, Instant Enjoyment,	Role of Anxiety	Importance of Modeling	Engagement

The following titles capture the essence of the activities in the first week of the study:

1. The *Novelty* of Physical Movement: A Moment of Situational Interest in the Threat of Communism
2. A Sense of *Surprise* in Free Trade and Isolationism: Brown Lunch Bag
3. The *Novelty* of Physical Movement: Immigration Policy Box
4. *Novelty, Surprise, and Ambiguity* in the Rise of Unions: The Picket Sign

5.1.2 The *Novelty* of Physical Movement: A Moment of Situational Interest in the Threat of Communism

To begin the study, Mary and I included a low degree perturbation that would surprisingly occur in the middle of the students' note taking to examine the impact on the students' situational interest. The "Duck and Cover" used the collative variable of *novelty* and the situational factors of *social interaction* (Bergin, 1999) and unexpected physical *movement*. To teach students the magnitude of the fear associated with communism, the students simulated the "Duck and Cover" drill school children used in the 1950's in the event of a nuclear attack.

The video-tape of Mary's teaching was played in the "Think-aloud" session. The children sat orderly in five rows of desks and chairs that neatly faced the front of the room. Mary read the notes aloud to deliver the content. To assure understanding of the content by all students, Mary reduced the content to the most basic terms. The Russians were called 'Reds' and that's why it is called the Red Scare. She looked out at the students and stated, "Does everybody understand?" No one answered. She moved on with the notes.

The children's heads moved in unison as they looked back and forth to transcribe text from the screen that displayed the chapter notes. Like marionettes, the students required behaviors to maintain order in the classroom. Every so many seconds, students relieved their still

postures with unobtrusive gestures to secure relief from lecture. In the background of the note taking, students were holding their heads in their hands, yawning, bouncing one leg under the desk, chewing nails, fixing hair, picking at clothing, tapping pencils, adjusting books, sneaking glances at a neighbor, rubbing an ear, sticking items in a jacket, or looking around. They were sophomores taking notes in a history class.

After Mary had gone over the Red Scare from the notes in the chapter, she said, “Stand up. Stand next to your desk. I need you to go into a ‘Duck and Cover’ mode. I need every single one of you to get under your desk, please. Make sure you are under the desk. Okay, listen carefully. We are in ‘Duck and Cover’ mode. Can anyone tell me what they were afraid of? (A few students respond by stating “the enemy”) Now, listen to me. If the atomic bomb was dropped would this save you? ” (VT)

As we viewed the video portrayal of the “duck and cover”, I asked Mary, “What sense are you making of the videotape when you see it?” Mary replied,

It doesn't seem like they got anything out of it at all. Watching it here, seemed like they were just climbing under their desks, and they had no clue what was going on. But the conversation that we had with it though, they seemed like they did understand the connection. (TALS)

In Mary's view, students appear to be not getting “anything out of it at all.”

To Mary, students also appeared clueless about why they were climbing under their desks. On the other hand, she felt that the conversation they had about the “Duck and Cover” indicated that students understood the connection between the content of the Red Scare and why they had to enact “duck and cover”. This may support Schraw, Flowerday, and Lehman's (2001) claim that *sufficient background information* is a situational variable that must be provided when a teacher is trying to influence situational interest in lesson design.

A student confirmed Mary's perception that "...it seemed like they were just climbing under their desks, and they had no clue what was going on." This student noted in the interview:

The duck and cover one was kind of crazy. We had to do it because of the bombs and stuff, but we didn't go into detail about the bombs and stuff. (MIS)

The student knew why they were doing "Duck and Cover", but she sought more information about the "bombs and stuff" that is uncovered by the activity. This student seemed to point out the need for a teacher to embed *sufficient background information* content in the activity so that learning experience will contribute to deeper understanding of what it intended to achieve.

Without setting the stage with specific knowledge about Communism, Mary asked students to get under their desks. The discussion of how Communism evolved from the 20's to the 60's, or the use of dominoes as an analogy to show how one country after the other was falling to Communism, or the discussion of Karl Marx's theory of Communism as pre-planned did not take place (see Chapter 4). Discussion about Communism and analogical reasoning would have set the stage for students to make more connections to the 'physical movement' involved in the "Duck and Cover" activity that was supposed to characterize the Red Scare.

I asked Mary in the Think-Aloud session if she had the same impression when she did the "duck and cover" in class. She stated,

Well, it was something novel. You know, it was something different. I felt like the more we did it the better they were able to make the connection to what we were talking about. But on the tape it doesn't look like they did. It looks like it is more chaos. (TALS)

Mary saw the activity being "novel". It was a "different" activity to what students were "used to". Mary thought at the time of the lesson implementation, the more students experienced

the activity, the more they were able to make connections. However, as she observed the videotape, the activity appeared to be chaotic.

As I viewed the video, I wondered whether Mary was having trouble trusting learning situations that engaged students actively, in this case a ‘physical movement’. While Mary conducted “Duck and Cover”, her voice showed signs of nervousness. She appeared to examine the activity for signs that confirmed things getting out of control. When the “Duck and Cover” activity invited students to move, especially when the class was comprised of mostly boys and special needs students, the balance of control in the learning activity became vulnerable. This indicated to me that a teacher who was new to adding ‘physical movement’ to a learning sequence may experience anxiety about losing control when students are encouraged to participate in novel movement.

The students’ perceptions were varied about the “duck and cover” activity. Some students viewed the *novelty* of sudden physical movement of the “Duck and Cover” *exciting*. When I asked students at the interview, “Which activities did you view as exciting?” a student answered, “The ‘Duck and Cover’. We actually got out of our seats and saw how it would be during a bombing.” (MIS) Another student said, “We would be just sitting there and all of a sudden we would have to get down” (MIS). The *novelty* of students getting out of their seats and seeing how it would be during bombing was exciting to them. This may suggest that the “*novelty* of physical movement’ may support the dimension of ‘instant enjoyment’ suggested by Chen et al (1999) and play a role in creating *situational interest* in learning.

When students were asked, “What parts of a learning sequence are *most appealing* to you?” Appealing is a feature of Instant Enjoyment in the Situational Interest Scale. In their ‘Ticket-Out-of-the-Door Survey’ (TODS), a number of students (n=7) perceived that ‘physical

movement' in the "duck and cover" activity was *appealing*. Consider the statement made by a student in the TODS: "When we do stuff and have to get up out of our seats and do something." Based on this representative example of students' collective perception, if we want a lesson sequence to appeal to students' *situational interest*, it should consist of activities that require unexpected or *novel* 'physical movement'. This suggests that based on the learning outcome of a particular activity in a learning sequence, 'physical movement' may be included to make students' learning experience more appealing that creates *situational interest*.

As I viewed students in the video during the "Duck and Cover" activity, I observed that the "*novelty* of physical movement,"—*novelty*, a variable of *situational interest* was caught by students only momentarily. It was not held. Students were buried below those earth-tone desktops, laughing and smiling, including the student that could not fit under the desk. For Mary, these were "cues that they were actually interested" as revealed in the following excerpt:

Well, they were laughing and smiling and it was something different. You know, I think that particular kind of activity, it always makes someone uncomfortable. Like Paul said, 'I don't want to get under my desk. I can't fit under there'—that kind of thing. You know a sense of being uncomfortable. (TALS)

Mary associated "laughing and smiling" with *situational interest*. Mary's observation of the students "laughing and smiling" supports the dimension of *Instant Enjoyment* identified by Chen, Darst, & Pangrazi (1999). Mary viewed the "Duck and Cover" activity to be something different from the normal learning experience of students. She considered that such an activity would make students uncomfortable. The ability to "fit under there" or the desk may actually detract from a student being interested in the activity. Mary's focus was on the outward manifestations of students. She did not seem to concentrate on the content knowledge development from the "Duck and Cover" activity. This could be because of her lack of content knowledge which she admitted in the pre-planning stage (see evidence in Chapter 4). This

experience indicated to me that a teacher's fluency in content knowledge during the design of lesson sequence and her ability to articulate such knowledge while implementing it in the classroom may be an important situational variable in creating situational interest.

Student 'physical movement' to depict the collative variable of novelty in the "Duck and Cover" activity was preceded by forty-minutes of note-taking as observed in the video-tape. The students' faces were lifeless and filled with overt clues of habituation. When I asked each student his/her interpretation of how the learning was different now than before in the interview that took place over five weeks, students were bored with taking notes and doing worksheets hour after hour. A student put it thus: "We just sit there and listen to the teacher talk, and take notes. It gets boring to sit there the whole hour" (MIS). When I reminded this student, "Would you say school is a lot of that or a little of that?" he responded, "Most classes it's a lot, we just sit there and listen. Some classes you do a few more things." Another student put it this way, "When we sit there and listen to the teacher talk, it gets boring to sit there the whole hour." The students are providing testimonies that they are bored of having to sit there, hour after hour, taking notes; yet, I wonder whether it is meaningful for teachers to return to teaching as they had been taught.

It takes time, energy, patience, and careful lesson preparation to watch students' *situational interest* grow. To accomplish this purpose, I was eager to see Mary moving beyond delivering notes to students. However, Mary and I differ in how each view the role of note taking in the teaching of social studies. Mary did not see anything wrong with reading aloud the chapter notes while students transcribed them. She viewed providing notes as a legitimate way for teaching American History. Consider the following conversation excerpt between Mary and me.

Me: When you look at this right now, there is no activity planned, just note-taking and you reading the notes aloud that is going on. What do you see as a teacher? As you just watch the non-verbal behaviors for the class

period, tell me what you find as being salient here, tell me what jumps out at you?

Mary: I guess nothing does—nothing jumps out at me

Me: As a teacher, do you look at this and say this is a good class period. When you are watching this from outside in terms of lesson design, would you make any changes?

Mary: With the ‘Duck and Cover’ and all that stuff or with note taking?

Me: Note taking.

Mary: No. I would still do that.

Me: Would you alter the ‘Duck and Cover’—would you change that?

Mary: Yes, I would change the duck and cover. I like the idea. I would change it just because what I said about the students who were uncomfortable. I hadn’t thought about the confined space and that sort of stuff.

Me: When we are watching this, are you interpreting the students as being interested—as the video rolls along, what cues are they showing you that they are interested or uninterested in how you are conducting this learning sequence?

Mary: I am wondering what Tyler is doing. I think they are still taking notes. It looks like he is off task an awful lot. I hear him a lot but I did not know he was so off task. He is incredibly bright. There is Nate not paying attention again. Do you think I should move Nate and Nick? Move those two?

Me: Explain to me—is this too long for them to not have any accountability of knowledge to you or not? Do you think that we need to hold them more accountable for their knowledge here or have an activity here where they have to wrestle with ideas or make them speak to us about their understanding.

Mary: Give me an example.

Me: Let’s say, somehow, we have to wake these kids up! They are just sitting there having to listen to what we have to say, without having to say anything or being immersed in knowledge. I think that is too much time when they are not having to be accountable or engaged. So, if we could provide some type of activity, where the kids are bringing it back to the teacher, instead of us going to them, constantly.

Mary: This is kind of interesting watching this all of the things that I don't see. What are you saying—constant accountability?

Me: Right now I am seeing too much sitting and writing everything down. There is no engagement on their part. I think to bring up the interest level, we have to make that engagement more real with an activity, and maybe next week, in the note taking part that we build in conversation and accountability so they have to bring back what they are understanding at the time, so that we understand their perceptions more. A teacher needs to look at what is going on while it is going on. When I look at this, we do not understand their perceptions. They are taking notes, but what do their notes mean to them? Whatever we as teachers put out, we need to understand back what the students' perceptions are of the knowledge—do they understand? What are they doing with it? Why are they doing that? So, I want to see if we added activities to have them tell us back what they are thinking and how they are constructing knowledge, if it will engage their interest?

Mary: Okay.

Me: What are you thinking—can we try that (MIS)?

Mary: We can try it.

Me: That's what I am doing here, Mary. I am just trying to see what the balance is that we need to strike. If we do this, does the interest go up or does it go down. Do we see more excitement going on or do we see no excitement—that's the study. If we are not getting them, let's try something else. I want to try actual learning strategies. Even using post-its to create reading maps, that's an activity we can do. With the books and the reading, do something with it. I want to see their engagement with the material. We must teach them how to make the material important to them. Am I making sense or not?

Mary: Yes, I get it.

(TALS, 03/21/2007)

This 'Think-Aloud' session is obvious that I am driving Mary to think about her own thinking why she sees nothing wrong with forty minutes of note-taking without having students having to share their sense-making of the subject matter. The video does not show students taking responsibility for constructing their knowledge. So I requested Mary to provide activities in the learning sequence that would immerse students in the knowledge rather than note-taking. I

wanted her to see what could be done to a learning sequence to enhance student *situational interest* as result of well-designed activities that would develop student knowledge of the subject matter. I reiterated that it could not be done by having the teacher give forty minutes of notes and then throw in an activity with the variables of *situational interest*. There had to be a relationship between how students conceptualize lessons and how lessons were designed. I needed to start planting the seeds of implementing *situational variables* in Mary's classroom. I requested Mary to incorporate some of the ideas I am suggesting in her future lessons. It was important for me that we be critical with each other. I intended to leave our session with a clear understanding of which direction that this study should go. Her acknowledgement, "Yes, I get it," signaled to me that the sunlight of spring was peeking through our discourse in the old neighborhood.

5.1.3 A Sense of *Surprise* in Free Trade and Isolationism: Brown Lunch Bag

On the second day of the lesson sequence on Communism, according to the video recording, Mary had done the 'brown lunch bag' activity to discuss the issue of 'free trade and isolationism', the focus of the lesson sequence. When the students walked into the room, there were five paper bags sitting on the floor in the front of the classroom to create *surprise*. The tops were neatly folded over. On the side facing the students, she had pictures of kittens on them to create *novelty*. Both *surprise* and *novelty* were the collative variables used to engage *situational interest*. The kittens were placed on the bags to create the situational variable of *humor* (Bergin, 1999). On the other side was the name of the country written in bold letters. Inside each bag were a number of pictures of the products and resources that came from those countries through trade. There was a bag for Columbia, France, Saudi Arabia, China, and Brazil.

Mary opened the lesson by explaining the value of free tariffs on open trade and how it affects the price that is passed onto the consumer. It is school policy that every teacher begins the

lesson sequence with journaling or a bell-ringer activity. Mary’s question for student journal activity was “Should we give up free trade markets?” Mary graded her journals, but she did not use them to share or expose students’ thinking. I wondered if she allowed time for student-directed discussion based on their written journal entries, if it held students more accountable for their understanding of the content, and if students knew their conceptions are expected to be shared aloud with their peers and their teacher, would they jot more of their thinking in their journals?

Mary followed up the bell-ringer journal entry with a review of the vocabulary terms from the day before. After she reviewed Lenin, Red Scare, the Bolsheviks, and Communism, she called students to front of the room whose name started with the same letter as the country that was represented in the brown lunch bag. She defined to students the economic concept of ‘isolationism’. Next, she used an analogy—lending things to nearby teachers to establish the individual factor of *relevance*. Then, she asked each student, one at a time, to take each picture out of the bag and explain to the class what it was that country brought to this country through trade. This was followed up with asking the class to decide if they could cut this country off, and if the United States could manage without these products. This portion of the activity used the situational variables of *hands-on* and *social interaction* (Bergin, 1999) to help to stimulate situational interest.

As I watched video students in the front of the room pulling the items one-by-one from the ‘brown lunch bags’, the other students eyes were fixed on the pictures of the items that they were pulling from the bags. The students who remained in their seats were not scratching, tapping, or reaching out to divert their attention to restless distraction. The *novelty* of inviting students to get out of their seats and breaking the habituation of constantly having to remain in

their seats was evident. The question I asked myself as I observed the video was “If activities continually invited students to move out of their seats, would the students become habituated and perceive staying in their seats as novel? Hence, would the situational factor of *hands-on or active learning* (Bergin, 1999) contribute less to influencing situational interest?”

As we viewed the video, I asked Mary what her interpretation was of teaching the activity, using *novelty* and *surprise*. Mary responded.

Some activities are not going to be as fun as others, but it made them understand the whole picture of isolationism. After we had talked about isolationism, I asked them what would be the benefits of being isolationists, and they couldn't really give me any. They didn't have any thoughts on it. They kind of sat there. Then, I said ‘Okay, let's pretend our classroom is isolationists and we'll shut the door, and do our own thing. If Ms. Morgan comes over to borrow scissors or something, we'll say, sorry we don't loan things out and shut the door.’ Then I said ‘What is good about that?’ They said ‘Well, you don't lose your scissors.’ I say that's true, then, I asked what's bad about that—then what happens when we need to borrow something?’ And they said they're probably not going to loan us anything because we kept our door shut.’ Then, when we did the paper bag activity and they could see things a little clearer. They saw how we would miss out on those things from other countries. The kids made a couple comments about France, and one of the things was beverages. Somebody said that's probably wine, and we talked about that. Then, somebody made the comment ‘Well a lot of the stuff we could make ourselves, but with wine we don't have a lot of grapes. Another student said ‘There are some things we actually need from others.’ I think it was a worthwhile activity. (TALS)

Mary saw the activity not being “*as fun*” but she felt that the activity provided students with a better understanding of isolationism. Mary noted that when she asked students to identify the benefits of isolationism that students “had no thoughts on it.” However, when she used the analogy of not allowing another teacher to borrow a pair of scissors to establish *relevance*, the students could readily identify the benefits and consequences. Then, by following up the analogy with the ‘brown lunch bag’ activity, it allowed students to see things “a little clearer.” Pulling the items from the different countries that were represented by each ‘brown lunch bag’ allowed students a sensory experience. As Mary stated, “They saw how we would miss out on those

things from other countries.” Mary viewed the activity as worthwhile. Because the *analogy* triggered student participation, it may be an activity feature that would also fall under Bergin’s situational variable of *modeling*. Little conceptual disturbance was integrated into the activity.

In my interviews with students, their responses were consistent with Mary’s feelings. Not one student named this as an activity that had *high excitement, fun*, or as having the *highest attention* value. This may be because not all students were required to play an active role in the activity. When a student is not required to have a direct role in the learning sequence, it may detract from a student’s perception of interest. Bergin (1999) cites *belongingness* as an individual factor that contributes to situational *interest*. On the other hand, when I asked students if the ‘brown lunch bag’ activity helped their understanding of the content on tests, several students stated “I went back in my mind and remembered what we did with the bag thing and stuff” (MIS). This indicated that using the collative variable of *surprise* and novelty of the bags and ‘the *novelty* of physical movement to guide the learning sequence may influence the ability to recall and the ability to understand concepts.

The consensogram showed the following results for the lesson sequence that included the ‘brown lunch bag’ activity (see Table 5.2).

Table 5.2: Consensogram of Isolationism Activity

Question	I wanted to find out more about the lesson	What we were learning today was interesting	The learning was exciting
Strongly Agree	1	2	4
Agree	4	12	8
Undecided	6	2	4
Disagree	6	1	1
Strongly Disagree	1	1	1

Eighteen students were present out of the twenty-one that could be included in the study. Thirteen students out of eighteen did not feel that this activity wanted them to learn more about the activity. This indicated that Chen Darst, and Pangrazi's (1999) dimension of Exploration Intention was not present in this activity. Fourteen agreed that the activity was interesting, and twelve students agreed that the activity was *exciting*. The students' response that the activity was exciting supports the dimension of *Instant Enjoyment* (1999). Although the learning landscape was showing only subtle signs of new growth, it was the beginning of a change of season.

I followed up with the 'brown lunch bag' activity's *situational interest* with Mary. Note the following conversation excerpt:

Me: How do you interpret students' *situational interest* as they experienced the activity?

Mary: The kids are more interested than usual. You know what I mean.

Me: What confirming evidence or disconfirming evidence do you see that the activity is eliciting situational interest?

Mary: They're all watching what is coming out of the bags without squirreling around.

(TALS, 03/23/2007)

Mary viewed that evidence of interest was when students are *intent on watching an activity without being restless*. This provides evidence for the dimension of *Attention* (1999). When I went home and watched the video-recording, and as my eyes scanned the corresponding video-text, the learning sequence conversation was too one-sided and students were exhibiting only a modicum amount of *situational interest*; yet, the learning sequence was beginning to bloom with possibility. I asked myself “What do I see and what would I see if situational interest was emerging?” I wrote extensively in my journal the following:

Great lessons are like engaging conversations. Interesting conversations don't just rely on words. When there is interest in communication, the bodily expressions are committed *to attending* (attention) to the source of that to which is engaging. Further, there is *a mental yearning* (exploration intention) to discover that which the other did not have to say. Meaningful conversation disturbs self-assured perspectives. It offers a proposal to explore the environment together in a marriage of thought or to be pleasantly *separated in each other's understanding* of what it is that is being experienced (discrepancy; challenge). Such conversations allow for what is known in India as Anekant—that there is no one truth. It is, however, when the mind, gets fat and drunken in the arrogance of certainty that a meaningful conversation dies like an old man who has told the same story over and over and over. Are teachers not couching learning in absolutes in American public schooling? In that old neighborhood, hour after hour, most teachers facilitate an understanding of absolutes, without the cognition that such pedagogical practice is fortifying a mechanical thought process that is the enemy of invention and creative thinking. Interesting conversations are also filled with Berlyne's collative variables or perturbations. Even more, poignant conversation fills one with a gratefulness that he/she is a part of this moment (Instant Enjoyment), and the conversant doesn't want to leave. This is how the learning sequence must be orchestrated. (MJE)

As I observed the video-recording of the lessons, I needed to define for myself what I had viewed as *situational interest* that is optimally being experienced by students. I saw the experience of *situational interest* as being a learning sequence analogous to an engaging conversation, where the conversant *yearns for more unlike thinking*. It is a learning experience where students want to be *attentive to the knowledge* “that there is no one truth.” I believe that

many educators do not understand the damage to invention when they just require a mechanical understanding of absolutes. Perhaps, if teachers would provide learning that *disturbs* and *challenges* the absolute, *situational interest* may be more encouraged in classrooms.

Although Mary had built in the variable of *surprise and novelty* with the ‘brown lunch bag’ activity to the lesson on isolationism, the conversation did not characterize disturbance or *perturbation*, which is another variable of *situational interest*. If Mary would have written on the bottom of each bag a dilemma that made the students do more valuing about adopting an isolationist political stance, perhaps more situational interest would have been elicited. For instance, the following is an example of such a dilemma that could’ve been written on the bottom of the bag to engage *affect* and *relevance* with *surprise* and *complexity*:

In an attempt to cut off our dependence on foreign oil, the United States adopts an isolationist approach and stops buying foreign oil from other countries. To meet the demand of consumption of this scarce resource, this means every household in America will have a curfew placed on the use of electrical appliances and the consumption of heat in each household—lights out and heat turned down in every household by 11:00 P.M. Take a few minutes and write three arguments that defend or disagree with this isolationist stance.” The perturbation here is the dilemma asks the students if they willing to turn off their computers or game stations at 11:00 P.M. to preserve a scarce resource and contribute to the common good.

The individual factors of *affect* and *relevance* is that each student must value and decide because the isolationist stance now involves each of them. It is not a note from a book that defines isolationism. Such a scenario disturbs students into constructing knowledge.

5.1.4 The Novelty of Physical Movement: Immigration Policy Box

The night before the immigration activity would take place, Mary and I again went over the logistics of the activity. I wanted Mary to include *sufficient background information* to discover if it would shed light on how the content of a lesson could create *situational interest* in students. We planned to have students act as lawmakers and create their own immigration policy. When I suggested illegal immigration as the topic for the bell-ring journal entry, Mary was very concerned about parent and student reaction to it.

I want to be very careful about that topic. I know I have a couple of students in here that that may be a hot topic. I know you like to bring the “now” into stuff, but I think the “now” may bring more trouble and ill feelings than it’s worth to me to do right now. I know I have a couple of students in this class who are probably illegal. (MIS)

To Mary, it was not “worth” what she viewed as causing “more trouble” or “ill feelings” to explore because students may view it as a “hot topic.” She thought that a teacher should be careful about topics such as illegal immigration. Since the beginning of the study, I observed that the degree of *situational interest* variables that Mary will only allow into her learning sequence was related to her perception of *how safe she feels* from being challenged by any member of the school or by parents in the community. One source of tension in our practice of teaching was that I was pushing her to disturb students’ equilibrium, and she was adamant that it is important for students to feel comfortable at all times with the content and its delivery. I believed that for *situational interest* to occur, an activity should create *disturbance* in the students’ minds that cause their thinking to have to reorganize. A teacher’s need to *feel safe* with content may influence the teacher’s ability to design lessons to create situational interest.

In my classroom, I take such risks. I believe that’s how children discover “Anekant” or that there is “no one truth.” Due to the large population of migrant workers, the school has many

illegal immigrants. Despite this reality, I still ask the class questions regarding “rule of law”, such as “Should anyone be above the law?” The general response is “No.” I then point out the people who fled to Canada to avoid the draft in the sixties or I point out illegal immigration. Next, I ask the students again “Are there any instances when a person should be allowed to ignore the law?” Then, I ask the students if illegal immigrants are above the law. Such questions pose a dilemma that I have observed encourages students’ interest. This is why I was encouraging Mary to be open to causing *disturbance*.

Because Mary viewed the legality of illegal immigrants at our school as a “hot topic”, I knew that I was not going to win this one with Mary. Knowing that the teachers in our school were taking part in the activities of labor and the union movement, I suggested a bell-ring journal entry about what Nike does with child labor. We “Googled” it and found an article about Nike and the company’s practices with child labor in Pakistan. “Okay, let’s go there. That’s going to be our bell-ringer. Does the article give a description of the kids and how long they are working and stuff?” I asked (PC). Mary nodded. Drawing from Shank’s work regarding the interestingness of material (1979), I wanted the vivid detail about child labor to be included into the learning sequence. I desired students to understand the severe working conditions that children had to endure in underdeveloped countries. Schank’s work suggests that such vividness or *surprising* details fosters *situational interest* (1979).

“Okay, this is what we are going to talk about—we can go from abuse in child labor to abuses in adult labor and ask even today what the threshold is? What labor laws should there be for adults and children?” I said (PC). I felt this would provide us with the opportunity to observe if we moved from vivid detail to dilemmas if *situational interest* would be engaged in students. I was trying to encourage Mary to thread *novelty and surprise* throughout the learning sequence.

“What crosses the line as unacceptable work practices—yes (MIS)?” Mary queried. Mary wanted to clarify if having students decide what “unacceptable work practices” was what I had in my mind:

Regarding child and adult labor practices...then, before they do the question or the activity, you need to hear them speak. Play devil’s advocate! Throw some curves in the material that makes them feel! That’s what Berlyne is saying. The kids are going to be like that stuff about the soccer balls. The working conditions that children must undergo will surprise them—what is the learning sequence (PC)?

Also, I encouraged Mary to have students share aloud how they viewed acceptable work practices for child as well as to create *surprising* dilemmas about child labor. “They have journal, and then discussion, then the immigration quota. Next, we do the immigration policy and end with the interest survey” Mary stated. Mary summarized the order of the events in the learning sequence, but she did not provide evidence that she understood the role that dilemmas would play in designing the activity for the ‘immigration policy box’.

Okay. They need to decide how many are coming in, and then, make them justify their quota. Have them provide the consequences and benefits of their decisions. Throw in the variables wherever you can. Have them draw inferences and connect their perceptions to what is going on during the time period. We must hear them talking together about their learning, where they are letting us know what they know. Then, we know what they perceive as the truth. (PC, 03/21/2007)

I wanted Mary to use *surprise, complexity, ambiguity, novelty, change, and indistinctness* to catalyze students drawing inferences about the benefits and consequences of the policy that they created from the dilemmas. I encouraged Mary to also include a forum in the activity where the students had to talk about their learning.

Mary said with frustration, “See that’s what bothers me about when I just have them talking to make sure they understand it’s always the same kids that respond” (PC). The way Mary observes when she asks students to talk about their sense-making of knowledge is that it is the same students who respond. Mary asks a question and calls on students who have their

hands up in the air. Perhaps, using this means of having students share their thinking allow students who do not want to be engaged in the discussion to leave the responsibility of sharing their sense-making to only a few students.

I quickly thought of how Mary could require all students to have to participate in their sense-making. For instance, if Mary placed the students in the room into four groups, then, for a grade, for each scenario in the immigration activity, required each group to list the consequences and benefits of each scenario. The students could list the consequences and benefits on a piece of paper that was folded “hotdog style.” Before students would vote on how many people in each of the categories, i.e., doctors, wine-makers, carpenters, etc., would be allowed into the country, each group would report why it would be beneficial or detrimental to this country. Every student would be obliged to report a piece of the group’s supposition and discuss their thinking. At the end of the hour, every student would submit his/her list of inferences for a grade. Mary used only a few strategies to check the perceptions of all students or strategies that created forums where students constructed knowledge together.

I believe that how a teacher orchestrates learning event has everything to do with why the same students are responding. The state’s content standards and benchmarks have many teachers always in a state of “moving on” to cover the breadth of the material, where it results in a superficial treatment of the concepts and benchmarks or in just an exercise of providing the required notes to cover the content. Instead of surrendering this suggestion of this strategy to Mary, I decided to sit back and encourage Mary to involve all students in the content.

“Should I just have a few students come to the front?” Mary inquired.

“No! No! The activity has to involve all of them. It cannot be just the few. It has to be something where it engages them all. Make them do something with the information,” I replied

(MIS). I reminded Mary that her activity should require the engagement of all students and require each student to wrestle with the knowledge. But the classroom events turned out very different.

Mary dealt with the topic of immigration in the learning sequence on *Americans Struggle with Postwar Issues* on the third day of the study, using the ‘immigration policy box’ activity. Turning to her notes, she explained, “...how immigration had gone from 141,000 to 800,000 from 1919 to 1920, and that this created a need to set a quota.” She asked the class, “What is a quota?” The majority of the students appeared to understand that it was a limit. On the board, Mary placed the limits that were set by the Emergency Quota Act of 1921, and she explained why the country felt the act was needed. She added that even today in New Zealand that you must hold a degree to immigrate to that country.

Mary then placed the covered ‘immigration proposal box’ in the center of the room. The box was used in the environment to create *surprise*. According to our planning session, the situational interest of *ambiguity* was expected to be planted in how Mary presented the activity. The higher level thinking involved in *ambiguity* was not integrated. Consistent with Berlyne (1965), when Mary called students’ attention to the box, all eyes were attending to the box in front of the room, and the rustling of usual distracting student behaviors temporarily ceased. Mary instructed students that they would now act like policymakers and create their own immigration policy.

Mary called twelve students to the front of the classroom:

I need help here. Kim, come up. Alyssa, come up. Alex, come up... What we have to decide as a group is how many people from each country that we will let in. Each person has an index card that has a career or situation on it .We have to decide how many people from that category that we will let in. This is how policy is made. Kate, what does your card say? Listen up, folks!” (VT)

Mary provided an index card to each student who came to the front of the room. She was enlisting students' participation by saying "I need help here." Mary was using the situational variable of *social interaction* (Bergin, 1999). She explained to students that they would have to decide how many people from each category mentioned on the card that they would let into the United States. Consider the classroom discourse that ensued as seen on the Video:

Mary: This is how policy is made. Kate read aloud what is on your card.

Kate: Airplane pilot.

Mary: Airplanes are just coming out—do you think we need airplane pilots?
How many are we going to allow?

Juan: Three! (shouted out)

Mary: Okay! How many think that we should let in three from each country?
(The majority of hands rose into the air.)

Mary: Kate, put three on the board next to airplane pilot and place the card in the box. Mary: Jason, what does your card say?

Jason: Field worker.

Mary: Listen up! How many field workers do we need?

Eddy: Fifteen!" (yelled out)

Mary: Now, help me out with this. How many should we let in?"

To give students a framework of the activity, Mary first said, "This is how policy is made." An analysis of the discourse excerpt revealed that Mary did not create dilemmas for each category on each card. The only thing written on the card was the identification of the job title. Mary had the student write the number of immigrants that the students said should be allowed for each type of work on the board and asked the student with the card to place it in the box. Mary did not require students to justify their positions. There was no student accountability for higher level thinking. The movement and the box were *novel* experiences for students. The student's

participation requirement is reading a category off of a card. When a student announced fifteen field workers should be let into the country, Mary did not ask the students to justify why fifteen field workers from various countries are needed during this time period. She asked the class how many field workers should be let in but not “why”. Mary continued on the same way through all of the twelve categories. This was a medium level perturbation. Although the students were not required to offer reasoning for their choices, the students may be justifying their selections in their minds.

Later, as I watched the video, I wrote in my journal.

I am not communicating well with Mary. She does not understand when I say “They need to decide how many are coming in, and then, make them justify their quota. Have them provide the consequences and benefits of their decisions. Throw in the variables wherever you can. Have them draw inferences and connect their perceptions to what is going on during the time period. We must hear them talking together about their learning, where they are letting us know what they know. Then, we know what they perceive as the truth.” I should’ve helped her create the dilemmas, but am I asking too much too soon. In the video, she appears not to be secure with the content or in conducting activities that allow students movement. “Listen up, folks” or “Quiet! Quiet!” are replete throughout the video text for this activity. It may suggest nervousness about losing control of the classroom. In the activity, movement and the environment was novel to the students and it broke routine, but it did not enchant the students to think or evaluate why the quota that they were setting was a service or a disservice to the common good. How do I better mentor Mary to thread in more of the collative variables, perturbations, and higher level thinking into the learning sequence? (MJE)

My observations that the activity needed more substance and dilemmas and *sufficient background information* (Schraw, Flowerday, and Lehman 2001) threaded through it to sustain more situational interest were also shared by students. One student put it aptly in the student interview:

Kyle: In the immigration policy, I wanted to see what the real statistics were of people coming in and what their occupations were and stuff.

Me: So, you wanted more information and thinking requirements for the students added to the lesson that would have made it more interesting (MIS)?

Kyle: Yes

Me: Which activities made you want to know more about the subject?

Chad: The immigration policy—I wanted to know how (the government) went through it and decided which people could come through and which ones couldn't.

Me: How the immigration activity could have been more interesting.

Steve: Probably have to show them crazy facts about immigration, stuff that they (students) don't know about it—like about the people, different kinds of people and stuff. Then, maybe another time, have people learn different kinds of immigration like how different they work in other countries. Show how America first started, and then show in the 1900's and how different immigration has gotten. Kids listen to more when it's different stuff. When I hear different presentations, I pay attention more. When they have pictures, I listen better, because I like to visualize it. (MIS)

Kyle asked for “real statistics” of the numbers of immigrants that were coming into America and their occupations. He also wanted more thinking encouraged in the activity. Using *relevance* by creating a dilemma that was generated by statistics from “then” and “now” may have sustained students' interest in the activity.

Steve expected that a teacher provide a model of the process that the government currently follows prior to the student simulation. This may suggest that if Mary had included the *novel* information as to how congress currently decides immigration quotas, that students' situational interest may have been better encouraged by adding such information to the learning sequence. Also, finding an immigration policy that failed in the past and explaining to the students the political ramifications may have helped students better formulate their own policy with more interest as well as higher level thinking. Again, this supports the idea that *sufficient background knowledge* is an important situational factor in creating situational interest in lesson design.

The third student pleaded the case for more novelty and surprises in the activity. This student indicated that “crazy facts” or “stuff that they (students) don’t know about it” or “different kinds of people or “different kinds of immigration” would’ve made the activity more interesting. The student proffered the theory that students listen more and pay attention more to “different stuff.” As he put it, “Kids listen to more when it’s different stuff. When I hear different presentations, I pay attention more.” This supports the idea that threading *novelty*, *change*, or *surprise* throughout the learning sequence may contribute to *situational interest* being caught and held. The third student also supports the individual factor of using relevance with a then and now approach in the teaching of social studies when he suggested “Show how America first started, and then show in the 1900’s and how different immigration has gotten.”

Other students felt the activity was fun. As one student stated when I asked which activity made the learning fun, “The immigration policy one, because I got to see (through the simulation) how they treated people as they were coming in and I got to see how people came in.” This student connected the concept of fun to an activity that allowed her “to see” the content. This may support my supposition that contends activities that allow students “to see” the content may play a role in greater situational interest.

The following discourse excerpt is the conversation with Mary in the “think-aloud” session as we viewed the video:

Me: How did you interpret the lesson using Berlyne’s collative variables to design the activity?

Mary: The immigration activity, I liked that one. I think it engaged most of the kids, but I don’t think it engaged all of them.

Me: Let’s take a look and tell me what you think is going on here, what sense do you make while watching the film and tell me any observations you make regarding interest. Do you see confirming or disconfirming evidence that the students are demonstrating situational interest?

- Mary: Yes, I do. The students are more *attentive* and less distracted.
- Me: Did you feel using Berlyne' variables to design the activities were engaging more students in the activity?
- Mary: As many of them as I think I could get. Some kids, I am coming to the conclusion after a few days of this, that I could have a fire engine come through this room and some kids would not blink an eyelash.
- Me: If we go back to when they are taking notes to now, do you see a big difference in their enjoyment in class and that they like what is going on in this activity? If we could compare/contrast this to the segments when they are taking notes, do you see a difference in the way they look such as their smiles, etc.?
- Mary: Yes, but I am not sure if it is because of what they are doing or because they are sitting next to each other are able to talk. I am talking about the ones that are up here. These three or four—I had to get on them because they were talking. It's the nature of the beast when you are doing that kind of stuff.
- Me: Do you think the immigration activity was successful?
- Mary: Yes! Absolutely.
- Me: Do you see this as being more engaging than when they are taking notes and do you think this assists more in cognition and with what they are getting out of immigration?
- Mary: I think it enhances the notes. I am not going to say they do not need the notes
- Me: Do you see confirming or disconfirming evidence that students' interest is being caught and held in this part?
- Mary: Yes. I saw it in what we are doing in terms of seeing it in class, and at the end, how the kids were able to summarize a little better and also bring up ideas in terms of the immigration policy, and also, at the end of the lesson in the survey. Several students answered 'I like what we did today.'
- Me: What do you make of question #5 on the survey? 'Have the activities in class helped you to better understand the material?' Out of 19 students in the study, 15 said 'Yes'. How do you view that as a teacher? Are you finding value in what the kids are saying about the activities that are being done this week?"

Mary: I think this is a very positive thing.

(TALS, 03/22/07)

Mary liked the immigration activity because she perceived that the activity *engaged* most students. Mary felt that the students demonstrated more situational interest. She again associated *attentiveness* and lack of distractibility with situational interest. I wanted to know if she saw a relationship between the role of the variable in the learning sequence and how that influenced students' situational interest. However, I did not communicate the intent of my question properly. Mary felt that I was asking if more students were engaged. Mary described that most students were more engaged as a result of adding the variables to the activity in the learning sequence, but she was arriving at the conclusion that even a fire engine coming through the room would hardly influence the situational interest of a few students. The intent of my question was to understand if Mary observed any likenesses or differences between when students were taking notes and when they were being immersed in the immigration activity. Mary saw a *difference in the enjoyment* being experienced by the students, but she questioned whether the enjoyment that she observed was due to the students' opportunity to socialize more or due to the design of the activity. Mary associates *instant enjoyment* with the opportunity to socialize more. Mary believed that *movement* in learning that is *novel or a change* in the environment encourages more talking and less order—"It's the nature of the beast when you are doing that kind of stuff," she stated outright. Mary observed the dimension of *instant enjoyment* and *attentiveness* as dimensions of situational interest.

To the question, “If she thought the immigration activity was successful,” her reply was one of resounding affirmation. Mary believed the activity was a success, but she did not share why it was the cases.

Mary saw threading situational interest variables into the learning sequence activities enhances note taking. She believed students need to take notes to learn social studies. Mary was not showing a willingness to design activities with the variables to supplant traditional note taking, where teacher dictates and students write rather than allowing for more student constructed note-taking and learning.

As we continued to watch the video of students’ behavior during the immigration, I wanted to know if Mary felt students’ situational interest was caught and held. To Mary, evidence that students caught and held situational interest was that she was “seeing it” in class, students were better able to summarize better, students were providing more ideas than usual about the immigration policy, and several students mentioned in the survey that they liked what they did that day. Mary identified students’ *ability to summarize better and provide more ideas* as individual variables that provide evidence that situational interest was caught and held.

Mary and I had discussed that we would use the data and findings in the survey to construct future learning sequences that would integrate the situational and individual variables that were identified by the students (see Chapter Three). I wanted to know how Mary viewed that fifteen out of 19 students felt the activities helped them better understand the material. Mary found the feedback that the students felt the activities assisted them with their understanding of the content as a “very positive thing.” Mary did not elaborate, and I did not push her to specifics as I should have. The conversation text is revealing shortcomings in my ability to probe about sensitive issues.

In my view, although the immigration activity did use *novelty* of physical movement or *surprise* with the box in the front of the room; it did not, however, incite higher level thinking. Although the activity was not a higher level perturbation, immigration box did result in more student situational interest.

5.1.5 Novelty, Surprise and Ambiguity in the Rise of Unions: The Picket Sign

This was the fifth day of the lesson sequence on *America Struggles with Postwar Issues*. The special topic was the Rise of Unions. Mary dedicated fifteen minutes to explaining the content and having students take notes and answer questions on the ‘rise of unions’, but there was a subtle difference from what I had observed before. Now, there was more than using notes to give out information and having the students taking notes. Mary used the notes to lay the groundwork for the activity because she uttered, “Today, we would be doing the picket sign activity” (VT). Mary was using the notes to meaningfully connect to the activity to provide the situational factor of *sufficient background information* Schraw, Flowerday, and Lehman (2001) to create more *situational interest*.

Conversation about the purpose of the union follows:

Mary: What is the purpose of unions?

Students: Benefits!, Retirement!, and Salary!” (shouting out)

Mary: What about specifically in the workplace?

Matt: —to improve the environment.

Mary: Good job—but what about safety issues? Unions will fight, for instance, to have equipment checked every 30 days for safety. throughout time, unions have had ebbs and flows. Now, why does a union strike—what does it mean to go on strike?

Students: To quit working (in chorus)

(VT, 3/23/07)

When Mary asked students to think about the purpose of unions within the workplace, students shared their prior knowledge about the benefits of unions. A student from the back of the room saw the role of unions to improve the workplace. Mary rewarded the students' answers with a statement of affirmation: "Good job." She pointed out the role unions played in the safety issues of the worker. She then sought to understand if the students comprehended what it meant to go on strike. The students understood that the expectation was to proffer plausible reasons why workers may go on strike and confidently sing out "To quit working." Using the benefits of unions, Mary was establishing *relevance* to promote *situational interest*.

Mary explained that strikes typically result when employers and employees come to a standstill and cannot agree upon what is fair labor practice. She pointed out that during World War I that everyone agreed not to strike, but after the war, many strikes were taking place. She enlightened how the employers called the strikers: "Communists." She vindicated how the word "communist" was used to call someone a "bad" person or someone to be suspicious of. Mary explained how unions were trying to assure fair labor practice and how businesses were labeling the strikers as being "Communists."

The students took down the concepts from the chapter in their notebooks as Mary explained each event. She told them how the Boston Police went on strike because they did not have a pay increase since before World War I, and how Calvin Coolidge had fired them all. She covered the role of the KKK and how there were five million strong and hated unions. She told the story about John Lewis and how he bargained a 27% raise. She completed the notes with a description how immigrants made up most of the workforce and many of them spoke different

languages, which made it difficult to get workers to agree on things. She passed out a blank piece of white paper and told the students to close their notebook. Mary transitioned into the activity that we had planned together by passing out the white sheet of paper.

Mary provided her students with an explanation of each of the events in this section of the chapter. This part of the learning sequence provided the background to what is yet to come with respect to *novelty, surprise, and ambiguity*—the collative variables of *situational interest*. This activity was a high degree of perturbation. Mary pointed to the board, where she had a 3 foot by 2 foot sign taped to the dry erase board that said “Factory Entrance.” In front of the sign, she had drawn a line to the floor with masking tape. Lying on the floor next to the line were yardsticks. The environment was *novel* and it had caught the students’ attention as soon as they entered the classroom. Several students asked “What’s going on?” Mary told the students that it was part of today’s lesson (VT).

Mary mentioned that each person in class had a line in his own mind and he would be willing to cross to go out on strike. She told the class that the yardsticks with the posters stapled to them represented picket signs. She asked the class what a picket sign might say if union workers wanted higher wages. Then, she asked students what the purpose was of picketing in front of the factory where the employees worked and why this would make the employer angry. Several students verbally volunteered “Strikes would stop business and would stop production” (VT). The students were *eagerly watching* (attention) Mary’s every move. They desired to see where this lesson was leading to. Predictable classroom behavior was now *disturbed*. Students now paid more attention than before when they were taking notes earlier.

Mary said, “I need four volunteers.” She selected four male students in class to come to the front of the room. “I need two here and two here,” Mary said as she placed two students on

each side of the line. Instead of immediately explaining what they will be doing, Mary walked to a student's desk and sat on top of it. She had a manuscript in her hand that was picked up from her desk. Mary instructed her students:

Listen to me. I want to talk to you about a book called *The Jungle*. Upton Sinclair wrote this book about the meatpacking industry in Chicago. This was before the time that there was safety procedures put into effect in the factories. As I read excerpts from this book, I want you to think about the line in your mind and ask yourself 'When is enough enough!' When you decide which issue is enough for you and you are willing to strike, I want you to write a line of protest on your picket sign or the white sheets of paper that I just put on your desk. It should explain your unhappiness about the conditions in the meatpacking plant. (VT, 3/23/07)

Obviously, Mary was now observed to teach by attempting to incite *situational interest*. Reading the *vivid* detail in the excerpts from *The Jungle*, Mary used *surprise!* She involved every student by expecting each student write his/her protests on his/her picket sign. She used their *affect--emotion* that requires reasoning (Bergin, 1999). Mary read excerpts that described the unsafe working conditions, the long hours, and the child labor—all appealing to emotive reasoning that evokes *perturbation*. She read the part where the worker falls in the vat and he was made into sausage. She explained that during this time period there was no inspection of meats as it was being packaged. She asked the class to raise their hands if any of the issues would bring them to be willing to strike. Fifteen out of seventeen students present were willing to go out on strike. The students are *attentive* and *engaged*.

“But wait!” Mary screamed emanating *surprise*. She pointed to the four young men at the front of the room. “What if these two are Chinese immigrants that are willing to cross your picket line and work for fifty cents a day? Now, your job may be in jeopardy. The employer may fire you and hire these workers. Are you still willing to go out on strike? Now, who would back out?” (VT) The “What if...” question posed a dilemma or a *perturbation*—a variable of

situational interest in the lesson sequence on *America Struggles with Postwar Issues*. Each student in class was asked to decide if they would still go out on strike if others were willing to take their jobs and work for less. In the video, the students' eyebrows scrunched in thoughts. They have all become more *serious* and *attentive* because they have to make a decision. The activity was using the situational variables of *hands-on*, *social interaction*, and *discrepancy* to foster situational interest.

Ten students raised their hands that they would now refuse to go out on strike. Mary pointed out that such a situation often made the workers on the other side of the line end up in physical confrontations. Mary asked students at the front of the room to take their seats. She passed out a handout that had four political cartoons that addressed the sentiment of unionism, the KKK, and immigration. She reinforced the issues of unionism in that time period. She went over the meaning of each cartoon, although this responsibility could have been given over to students for homework and shared in the following class period. However, students' homework assignment was defensible. Mary asked each student to draw his/her own cartoon on the back of his/her picket sign that would demonstrate his/her understanding of a concept from the chapter on *America Struggles with Postwar Issues*. The homework assignment provided the situational variable of *meaningful choices* Schraw, Flowerday, and Lehman (2001) to create situational interest. The students were able to *choose* what to write on their picket sign and *choose* how they wanted to illustrate the *emotion* in the cartoon. That day, Mary's learning sequence was designed to embed situational interest in the content. She seemed to be growing in her pedagogical perspective.

At the end of the hour, we asked students to fill out three more consensograms, which posed three statements of decision: "I wanted to find out more about what we were learning

today,” “I enjoyed today’s lesson” and “I was interested in today’s learning experience.” The findings are represented in the following table (see Table 5.3).

Table 5.3: Consensogram of Picket Sign Activity

Question	I wanted to find out more about what we were learning today	I was interested in today’s learning experience.	I enjoyed today’s lesson
Strongly Agree	4	5	6
Agree	10	12	12
Undecided	4	1	0
Disagree	1	1	1
Strongly Disagree	1	1	1

Out of twenty students, fourteen said the lesson made them want to find out more about what they were learning. This provided evidence that supports Chen Darst, and Pangrazi’s (1999) *Exploration Intention* dimension of situational interest. Seventeen students out of twenty said they were interested in this lesson. Eighteen students out of twenty said that they *enjoyed* the lesson. This supports Chen, Darst, and Pangrazi (1999) *Instant Enjoyment* dimension of situational interest. The students provided evidence that if a teacher uses *novelty, surprise, and ambiguity, in a lesson sequence, it may elicit students’ situational interest in the content of the lesson. It was early spring in this old neighborhood; there was enough warmth in the lesson for the seeds of interest to slowly begin to sprout through once-hardened pedagogical ground.*

Students stated in the interviews that this activity caught and held their interest. The activity was perceived by most students as an activity that made them want to learn more about the subject. The *novelty* of the information was alluded to in most of the students’ answers.

When I asked a student if any of the lessons made him want to learn more about the subject, he aptly put it, “The working conditions one! That was really interesting. That was crazy! I wanted to learn more about that—how they made that one person into the meat and sold it!” (MIS). This student cites the *surprise* of the vivid detail about the man being ground into meat, as the reason for wanting to know more about the content. Another student testified, “It was interesting to hear about the unsafe working conditions.” (MIS) His interest stemmed from hearing about the unsafe working conditions. Recalling the book, a third student asserted, “The meat packing plant thing, it was interesting to me. I wanted to know more about that book and stuff” (MIS). A fourth student reasoned, “I liked that one because you don’t know what really happened. Now, you see everyone wearing gloves and how much safer it is to eat food. But when you hear about back then and how they didn’t even wash their hands and just used their bare hand—that is kind of gross” (MIS). This student wanted to know more because “it was kind of gross” that the people didn’t wash their hands in the meatpacking plant. The students’ responses in the interviews indicated that the *novelty* and *surprise* embedded in the information given by the teacher influenced their desire to learn more.

The ‘picket sign’ activity was also considered as one that held students’ attention because it offered them *choices* and *encouraged them to think*. Consider the following statements made by students:

Tyler: The picket sign one held my attention because we got to decide what kind of picket sign we could make about the sausage factory safety.

John: The picket sign activity held my attention because we made signs and could put whatever we wanted on them.

Lynn: The picket sign was exceptional. It made us think of a reason to make the sign.

Tyler attributed his attention being held because he was able to *decide* what kind of picket sign he could make. John stated that his attention was held because the students were given the opportunity to *put whatever they wanted* on the sign. Lynn suggests her attention was held because she had to think. This may provide evidence that making students think, giving them choices, and allowing them to make decisions as traits of activities in a lesson sequence that will raise attention and *situational interest*. This provides evidence that supports the claims by Schraw, Flowerday, and Lehman (2001) that *meaningful choices* incite situational interest and Chen Darst, and Pangrazi's (1999) *Challenge* dimension of situational interest.

In the student interviews, I asked, "Does bringing in material or information from outside the textbook make the learning more interesting for you" (MIS). A student stated, "In textbooks, it is mostly stuff they want you to know instead of all of the stuff that other people know from the newspapers and stuff. When you add more of the information together, you may get more of the truth" (MIS). It is this student's perception that textbooks only provide the information that they want the students to know and ignore the history being told through the eyes of newspapers or through primary sources. The student felt that it would be more interesting and students would "get more of the truth" if teachers balanced information with outside sources. The authenticity of information was also raised by another student, who expressed, "The textbook gives you the view of one person. If you go beyond the textbook, you may get more people's point of view, like that Jungle guy and others!" (MIS) This student believed teachers providing students more people's points of view would incite more *situational interest*. It was felt by these students that a textbook's bias restricted the ability to elicit *situational interest* in the content. The students cited the 'picket sign' activity augmented with outside material *The Jungle* was essential to creating in

them more situational interest in the content. Again, *providing sufficient background information* (2001) contributes to situational interest.

Mary also ascertained that the picket sign activity was the one that created most situational interest when she stated, Today's! Especially in 5th hour with the picket sign thing. Even though I ended up changing it, they were really into that." It occurred to me that I was seeing a relationship between the number of situational and individual factors that were being threaded through the learning sequences with the collative variables and the amount of situational interest that we were observing. It may be that the more that is integrated into a learning sequence at a greater frequency may result in greater situational interest. It was spring. We were both showing signs of growth. (TALS)

5.2 Week Two

"Let's go through tomorrow and the car stuff and how it changed things (MIS)." Mary stated as she looked through her lesson planner. The following is the timetable for the lessons planned in week two and the variables that would be used to create the perturbations:

Table 5.4: Timetable for Week Two

Date	03/26/07	03/27/07	03/28/07	03/29/07	03/30/07
Activity	Automobile activity	Electricity Activity	Advertising Activity	Coffee Haus	Model T Activity
Collative Variables	Ambiguity Surprise	Surprise Novelty	Surprise Novelty Ambiguity		Change novelty Surprise

The following titles capture the essence of the activities in the second week of the study:

5. Ambiguity and Surprise: Consequences and Benefits of the Automobile.

6. Novelty and Surprise: The Role of Electricity in History.
7. Ambiguity, Novelty, and Surprise: Advertising in the Twentieth Century.
8. Novelty, Change and, Surprise: Belongingness on the Assembly Line

5.2.1 Ambiguity and Surprise: Consequences and Benefits of the Automobile

Mary and I discovered in the second week of the study that not just using the *ambiguity* and *surprise* to design learning sequences influences *situational interest* but *situational interest* is also influenced by how carefully a manipulative that will be used in the lesson to create the *ambiguity* and *surprise* is designed. In this activity, the small size of the manipulative that was used to incite *surprise* and *ambiguity* played a role in the situational interest that the students experienced.

In the planning stages of this activity, I reflected back to ‘The-Ticket-out-of –the Door Survey’ (TODS), a number of students (n=12) perceived ‘*novel* activities’ and ‘group involvement’ as features of an activity that held the most attention. I wanted Mary and I to incorporate more of the variables cited in the survey and more of Bergin’s (1999) and Schraw, Flowerday, and Lehman’s (2001) individual and situational factors into future activities to see if it would play a role in the situational interest. I had come into our planning session with an idea about how we could do this. I asked Mary how she thought we should design the activity to teach this section of the chapter.

Me: How do you think we should design the learning sequence with the variables?

Mary: I haven’t gotten to that yet. The things I will get to that day will be how the car was becoming popular, and stuff. I thought about having a consensogram, but not about a normal one to see if they’re interested, but one where you have to get up and write on the board about the various jobs that came into being because of the car . (PC)

Mary was looking at a *novel* way for the students to be engaged in responding to a consensogram. Mary was also looking at *novelty* in movement by having the students come up to the board and write about the various jobs that came into being as a result of the automobile.

Me: Could we develop that into a more dramatic activity that gets them to think? When we are talking about the automobile can we do something that gets them involved? Where do you think that could come into the lesson? Are you going to do an activity to help the students make sense of the notes?

Mary: I am thinking about that period, what can I do with corruptions? I had a journal about corruptions today, but I didn't get to it in discussion. They did the journal but we didn't get to the topic .

Me: How about if we create an activity with the automobile, and we try that. I want to think about it. I want to think of something dramatic.

Mary: I want to think of it now, though.

Because 'The-Ticket-out-of-the Door Survey' (TODS) perceived '*novel* activities' and 'group involvement' as high interest activities, I was encouraging Mary to include more group involvement and to create a more dramatic *novel activity* than to have the students come to the board and write about the jobs that had accompanied the dawning of the automobile. I had jotted down a few ideas on my concept map but I wanted time to think of something dramatic. Mary wanted to come up with something now. I took my notes and quickly developed an idea that would use *ambiguity* and *surprise*.

Me: Okay-- You could talk about the consequences and the benefits (*relevance*) of the automobile throughout time. Cut out pictures that represent the consequences or benefits of the automobile over the years. But, we will take out a part of the picture to create *ambiguity* and *surprise*. Now, you have the students defend whether the picture represents a consequence or a benefit, and they have to draw the inferences with the specifics that allow them to conclude that. For example, I might put a picture of smog in L.A. up, but it will be an incomplete picture. The students would have to try to figure out from the clues what it is and they would have to defend with specifics why this is a consequence. What we have to do is start thinking of the list of benefits and consequences. Then,

we can make a list of pictures to bring in with a big piece cut out of it. Like a picture of a gas mask, what is the consequence...what about a pizza—can we associate that with the automobile? Are you getting where I am going on this?

Mary: Why are we taking out part of the picture?

Me: So they have to conceptualize the rest of the picture...it's going to grab their attention. It would be the gap in Berlyne's collative variables—the smog in LA gets them thinking about the consequences...How about this! We could take a big piece of the picture out of this (shows picture) and they have to identify what it is, and let's see if they can figure out what it is. It's like a *puzzle* (Bergin, 1999) piece. We'll take out a big part of the picture—it will be ambiguity. When you only see part of something you have to conceptualize to see the whole. Then, they have to defend if the picture represents a benefit or a consequence. Name some benefits of the automobile.

Mary: They can get to the movies. They can go from the country to the city. They can travel or move belongings—vacation. They could transport stuff. There are economic benefits like trucks transporting goods.

Me: Now, you're cooking in the kitchen! See what I am saying. It's like this. We can find pictures of those benefits that you just rattled off and take out parts and see if the students can finish it and defend it. We'll see if trying to discern what the picture is will hold their interest. You will need to make a list of all the benefits and consequences-- you can get pictures off of the internet and take parts out so the kids will have to identify the benefits from only part of the picture--Now, what about the consequences? Smog, pollution, global warming, depletion of oil, we have consumed over 50% of the oil in less than a 100 years—to show this, we need something like our own oil rig .What about deaths in terms of car accidents? To show mobility, we'll show Fed Ex or UPS just from the brown truck—getting things here quick, it's a benefit of the automobile. They must defend why. For instance, I can get my books over night. I can live where I want. Now, you can see your family with less travel time. Make the pictures big enough so the kids can see it but where they have to work on completion. (PC)

To create *ambiguity* and *surprise* and to create a gap in the students' ability to immediately recognize the benefit or consequence of the automobile, I suggested that Mary leave the picture incomplete or distorted. The incomplete picture would be a *perturbation* or create conceptual conflict. The students' minds would have to complete the picture before they could

identify the consequence or benefit. I also want to include the situational factors *hands-on*, *social interaction*, *puzzle*, and *discussion* (Bergin, 1999) in the lesson to see if the students provided evidence of *situational interest*. Mary was initially confused as to why I wanted her to distort the pictures, but she came to a better understanding when I provided her with examples.

Mary: Do you think the kids will go along with that? Do you think there will be kids who don't do well with that kind of activity?

Me: They won't all be *complex*. Make some of them so everyone has an opportunity for success. Go to advertising for some of the pictures for instant recognition.

Mary: Logistically, how would you do this? Do you put one picture up at a time? Then, you just write the T chart on the board?

Me: Yes. Big pictures! Take one out of the bag at a time so they are always wondering what's coming. Think *surprise*. Then, you are putting up an incomplete vision, and the kids have to complete the vision themselves and then decide if it is a benefit or a consequence of the invention of the automobile—they must defend their answer! Get a kid up to the board to fill in the T chart.

Mary: Well, I have too many kids who are slower.

Me: You will need to make sure that they all have opportunities for success in the activity. (PC)

Mary was concerned that the activity may be too challenging for some of the disadvantaged students. I suggested that Mary place some easily recognizable pictures from advertising to assure that every student could be involved in the activity. Like Bergin (1999), in the 'The-Ticket-out-of-the Door Survey' (TODS), a number of students (n=5) perceived humor as a feature of an activity that held attention. I was envisioning taking these giant incomplete pictures that stood as tall as a short elementary student out of a big bag. Any time children see things out of scale, they laugh. I felt it we added humor to *ambiguity* and *surprise* that the students may demonstrate even more confirming evidence of situational interest. The mistake I

made as a researcher was that I did not attend to the specific logistics of the pictures in this learning sequence, and it ended up taking away from the students' situational interest. To understand this, it is important to observe exactly how the learning sequence was implemented.

Mary opened with the journal entry "Which 20th century invention do you feel had the most influence over America's economy (VT)?" Mary did not discuss aspects of the bell-ringer with the students or bring in outside novel information to stimulate the students thinking about inventions. After five minutes of wait time, Mary began her notes.

She started by explaining the war debt that had been incurred by WWI. She informed the students how America had lent Germany three and a half billion dollars to pay back England and France so that both England and France could pay America back their war debt from WWI. This was followed by notes on Harding's presidency, the "Ohio Gang," and the "Teapot Dome" scandal. She explained how Harding died of a stroke and how Calvin Coolidge became president. She finished the notes by explaining how in 1927 the last Model T was built and by pointing out the importance of the assembly line to America's economy. This is how Mary transitioned into the activity:

"Guys, the automobile has provided many consequences throughout history. We're going to try to identify some of those today." Mary points to the T chart that was drawn on the board. On one side of the chart was a spot to list benefits. The other side was to list consequences. This was to establish *relevance* (Bergin, 1999). She asks for a volunteer. The student comes to the front of the room. "For example, now we don't have many people living on farms. People have left the farms and have moved to the city for jobs like on the assembly line. Now, would you consider that a benefit or consequence of the automobile?" Mary asked. "C'mon! Hands!

Hands!” Two students raise their hand. “Kiel!” She directed her statement to one of the students with his hands raised (VT).

“A consequence! Now, people can’t grow their own food (VT).” Kiel points out. “Good! Good!” Mary said. “Now, what we’re going to do is have a volunteer come up and pull out a picture. He’ll hold it up and bring it around to you. You have to try to figure out what the picture is signifying whether it is a consequence or benefit of the automobile (VT).”

Mary instructed the student to select a picture. “Okay! Hold it up and take it around the room. Matt! Guys, what is that? What is it (VT)?” Mary says to the class. The picture was the size of nine inch by 11inch photograph. There was a small piece that had been snipped from the corner of the photo. The picture is more obvious than *ambiguous*. The size of the picture does not allow for all of the students to be *involved* Bergin, (1999). As a researcher, I failed to craft these logistics more carefully in the planning session with Mary to allow for greater situational interest.

“A construction worker!” a student volunteered.

“Right (VT)!” she confirms after the student yelled it out. “Guys, how does a construction worker illustrate a benefit consequence of the automobile?” she asks. Then, she answers her own question. “Some people are able to get jobs in the city. Is that a benefit or a consequence (VT)?”

Several students yell out “Benefit (VT).”

“Good! Good! Kim, come up here!” Mary announces after the other student sat down.

Kim selects a picture and takes it around, row by row, showing the others. The students do *watch her intently* as she selects the picture. The *students study* the picture as

it is coming around the room. Having to take the picture from one student to the next is causing wait time. Once the picture passes each student, the students become temporarily disengaged. It was too much wait time to hold situational interest. This was a logistic of the learning sequence that needed to be discussed in our planning session (VT).

“Okay, what is it folks (VT)?” Mary asks loudly.

“A race car (VT)!” several students answer back.

“It’s a Nascar (VT),” Mary says. “Would you see Nascar as a benefit or a consequence? How could it be a consequence (VT)?” She asks the class.

One student yells out “The tires burning (VT).”

“Good! Good! What about a benefit (VT)?” she asks.

“Good Entertainment (VT)!” a number of students announce.

Mary continues in the same manner showing incomplete pictures of a movie theater, trucks, Wal-Mart, a graph that is showing how much gas has been consumed over the past one hundred years. The students are not asked to defend why they are identifying each as a consequence or a benefit (VT).

The last picture is an incomplete picture of a tire. Mary says “In terms of a tire is it a benefit or a consequence (VT)?”

Half of the class yells out “Consequence (VT)!” The other half yells out “Benefit (VT)!”

Mary tries to resolve the issue by asking “Folks, do tires decompose (VT)?”

The students who felt tires were a benefit attempted to defend their position with “But you need them to move a car (VT).”

The sudden restlessness made Mary quickly end the activity. “Okay! Okay! Turn the camera off (VT)!” she instructed the cameraman. The final few moments would be used to quickly restore order in an old neighborhood that insists the teacher is always in control.

In my journal, I reflected on what I saw in the videotape:

If I want to encourage more *situational interest*, I have to be more attentive to the logistics of the learning sequences because Mary is not comfortable yet being moved by variables in lesson design that move students out of routine and make the classroom behavior less predictable. Mary asks questions and answers the questions for the students; yet, she wonders why the students are not willing to discuss. In the activity, when the students want to put their positions on the table as to why tires were a benefit, she quickly ended the activity. For Mary, providing chapter notes is much safer. This type of research possibly that asks a teacher to design learning sequences from a new lens may need to allow time for a teacher to transition his/her pedagogical disposition into one that is more receptive.

Children like to think, but we often protect them from deeper thinking. We allow students to state aloud simple, one line answers without having them justify or defend their supposition or we do not *disturb* their thinking.

I watch the students’ eyes attending to the pictures coming out of the bag. They examine each picture as it is being ushered from desk to desk. They wait to see what was not known; however, there is not an expectation in this learning sequence that their thinking be more rigorous. The pictures needed to be *bigger* and more *ambiguous* for the students to be able to study them. The incomplete

pictures needed to be a gap in knowledge that required the students to wrestle with. Even more, the one time that Mary had struck gold in the activity, when the students wanted their voices heard as to why tires could be a benefit, she ended the activity. The children's thinking was finally *disturbed*. This is how the activity should begin. The students were insisting that they be allowed to defend why tires could be a benefit, but their restlessness concerned Mary. In this old neighborhood, teachers are required to micromanage students' behaviors and comments. This often sabotages higher level thinking. To make Mary more comfortable with these learning sequences and to allow for more confirming evidence of *situational interest*, I need to adequately communicate the logistics of the learning sequences. I am making many mistakes in this study. It cost us *situational interest*. I will try to be a better mentor to Mary (JE).

The students also confirmed this thinking. When I asked them in the interviews "Were there any activities that were too complicated or too simplified?" several students (n=3) stated that this activity was "too simple." As one student stated "There just needed to be more to it (MIS)." This supports the claim that an activity must have *sufficient background* information embedded into the activity to foster situational interest. This activity was never mentioned in the student interviews as an activity that held the highest attention or that it was the most appealing or that that the activity was exceptional. In the student interviews, this activity did not resonate as one that was memorable. This may point to the reality that the logistics of the activity may have caused the situational interest to suffer. If the logistics were attended to from a point of novelty, the students' situational interest may have been more pronounced.

One of the special education students did tell me that she liked the activity because it made her think about the role of the automobile. She said “I thought the car benefits one was good and what autos are doing to the world today. I thought about transportation and I thought that was a benefit but some stuff I thought was a consequence like pollution and stuff like that, but the benefit was transporting food so we can have food to eat instead of waiting to get our food (MIS).” This may indicate that interest for students with special needs may be tied to the student’s value of the cognitive experience. This may also indicate that eliciting situational interest with special education students may require a separate study.

Mary’s perception of the activity also indicated that the logistics of the learning sequence could’ve been better designed to promote more student situational interest. Consider the following conversation between Mary and me in our “Think-Aloud” session, while we are viewing the activity on video tape.

Me: Do you see any confirming or disconfirming evidence of situational interest being elicited?

Mary: As the pictures go by, the kids are at least watching the pictures.

Me: Is there anything in the activity that we could have done better, possibly to draw better interest, and did you feel having different students carry the pictures around detracted from the student situational interest in the activity?

Mary: If I had bigger pictures, I think it would have been better—You know, we were talking about those dry erase boards.

Me: If they had to write their answers on the dry erase boards, do you think that would have enhanced the interest with the tactile/kinesthetic kids?

Mary: I think it would help. I like that the students are trying to see the pictures. I really like that—the students seem to be coming in and out. In this is the activity, Rianne, one of the special education students, did tell me that she liked this one, but she really liked the electricity one the next day.

Me: What was your perception was of the activity?

Mary: I am telling you this was a bummer of a day.

Me: Is there anything salient? Let's talk about what salient is in terms of this activity.

Mary I did like the ambiguity part of it. I didn't think I would, but it helped me. I think it worked better 5th hour. I think I needed to make the picture bigger and less obvious to get them to really want to figure it out. It didn't go badly. I think it helped them, but they weren't terribly excited about it. Some of them didn't get it.

Me: Do you think that was because the student taking the picture around was moving too fast or was it because of the ambiguity of the picture? I wanted to see the students have to search for clues, identify the evidence, and share their perceptions with each other.

Mary: They did want to know why they were cut up. They asked 'Why did you cut them up?' I said that I would explain later. They thought it was some sort of puzzle .

(TALS, 3/27/07)

Mary associates the students' *attentiveness* to the pictures as confirming evidence of situational interest. In an earlier 'Think-Aloud-Session', Mary had suggested that it may be beneficial during these activities to provide each student with a dry erase board and have each student record his/her perceptions that were involved in the activities on his/her board. Mary liked that the video is showing that the students are "trying to see the pictures," however, she feels the students' *situational interest* "seem to be coming in and out." Mary also liked the idea of the *ambiguity* in the activity and felt that it helped her, but she observed three flaws in the logistics of the learning sequence. First, the pictures needed to be "bigger." Second, the use of individual dry erase boards may have encouraged each student to be more engaged. Finally, the pictures needed to be "less obvious to get them to really want to figure it out." This suggests that to foster more situational interest, that a teacher must be attentive to carefully craft the logistics of *ambiguity* and *surprise* in a learning sequence. Mary noted that the students wanted to know

why the pictures were cut up. It was her perception that the students felt it was “some sort of puzzle.” This may suggest that the novelty of the incomplete pictures may have engaged a strong sense of wonder in the students or *Exploration Intention* (Chen Darst, and Pangrazi, 1999) and had the activity been better orchestrated, we may have sustained longer periods of student wonderment or *situational interest*. It may also support Mitchell’s claim (1993) that puzzles catch situational interest.

I was frustrated that I hadn’t communicated or dialogued with Mary about the logistics of the activity more clearly. Although the students were showing interest, the level may have been enhanced by more well thought out controls in the study.

In the season of spring, often, it is in the understanding of why something doesn’t grow that provides us with the best wisdom as to how to nurture it. The logistics of the activity would be different next time.

5.2.2 Novelty and Surprise: The Role of Electricity in History

It was Mary’s suggestion that the intent of this learning sequence be to seek to discover if *novel humor* and *surprising* props to introduce content would catch and hold interest in the learning sequence. I wanted to make sure that the *novelty* and *surprise* was being nurtured in the activity by *relevance* and *affect* (Bergin, 1999). I also wanted the learning sequence to be well communicated, and well designed. For a better understanding of this intent and an awareness of how the situational and individual factors were being implemented in the design of the lesson, it is important to view excerpts from the planning session with Mary.

Have your first hour psychology class put the desks into groups of three or four at the end of the hour. Each group (*social interaction*) is a station, where we have cards that represents a category like jobs, schools, recreation, meals, etc. at each station. I think we should turn off the lights (*novelty*). Let them work by the light from the window. Each group of students are going to go around to each station, and they are going to answer how it was different without electricity and how it is

with electricity. Each station has three categories at each and each student in each group will answer how it was “Then” and how it is “Now” (*relevance*) on a piece of paper that is folded hot dog style. Each student will have a “Then” column on one side of the paper and a “Now” column on the other side of the fold. I want more participation. I want more people involved. At each station, they will describe how it was then and how is it now. Then, have the students create a nagging or strange question for each category, like “How did people shred their mail without electricity?” It can be a crazy question (*fantasy*). We can make this a 10 pt. assignment where they have to turn in the assignment at the end of the hour. Do this after the notes to make more connections to the notes. Then, for *surprise*, have Guinn come busting in while they are moving from station to station. You can have on the desks set up when they come in, and they can do their notes straight from there. Give them five minutes to do the activity, then, they move to the next station.. The next day, we use *ambiguity* for the advertising activity. We’ll have advertisements from back then and advertisements from now (*relevance*). We’ll leave out words in both advertisements. The students will work in groups of three and write out what they think the caption said. They must defend it by providing the clues from the advertisement that led them to coming up with that caption (*ambiguity*). This should lead into the activity about the jingle or ad for homework. Hold them accountable. They will use the answers on their paper to discuss their findings. Make them read it directly from the paper. We need to hear their voices to engage them. Listen to them. Are they being specific in their answers? Push them. Do not let them answer with abstraction. Each kid has to have a product. We are not holding them accountable for thinking, and I think that engaging interest has a relationship with that. They can’t just look at someone else doing the thinking; they each have to have a piece. We are going to see if that works. “Mary, you need to make them value. They need some *affect* (*emotion*) here—like, which one is better? I want to see what happens when we add affect or valuing. (PC 3/26/07)

“Like what (PC)?” Mary asked.

I could see that Mary was not quite sure what I meant by affect. I wanted her to understand. Consider the following planning conversation:

Have them identify the differences in house design when there was no electricity and when there was electricity. What did each look like? They have to give those specifics on their paper. How do they look now? What are the differences? When we look at houses back then and now, what were the costs of each of the houses? Now, we have plugs on almost every wall and appliances to plug in every wall. Is this a good thing or a bad thing? We are able to plug everything in but at what cost to this planet? Make them *value*. That’s where the *relevance* comes in. We can’t lose that piece. I want to see if that *relevance* sticks and the affect makes a difference in their situational interest. Once they start to value, the

affect part will lead to greater cognition, but will it cause the students to be more interested? Will it cause them to be more engaged? I want to see that on tape. We are seeing evidence of interest when they are active. We see their eyes fixed. We see that with *movement* and *novelty* they are interested, but there are pieces that are missing here. I just want to play with it. (PC)

I wanted to integrate with more intention the individual factors of *relevance* and *emotion* (Bergin, 1999) to see what would happen with the students' situational interest. Mary could feel that my heart was talking to her.

"I am good with it, Morgan. I am more flexible than anyone you know (MIS)!" She said. (PC)

Mary's dialogue indicates that she was becoming more flexible and open to integrating the situational/ individual factors and the collative variables into the design of the lesson. The pedagogical disparities between us were finding a warmer ground, Mary and I were growing.

Consider the following dialogue:

Me: Like jobs, ask the students how are jobs different today? How about sports? How are sports different without electricity? Now, we play football under the lights. Which is better? What's the cost to the environment? Put environment on a card. Do we have enough categories to put four in a group?

Mary: I think three would be better. Then, they won't be sitting too long at one station.

Me: Good idea! Okay, let's use different colors of paper. Fold each hot dog style and each and have different colored papers waiting at each station. Let each group choose which station they want to start with. At the end we close it with a class discussion, where we hear them valuing. Ask them to name some of the crazy questions they composed. Now, everyone has a product, and everyone is involved. Finally, go to the board and do some kind of concept board or some kind of "then" and "now" mapping activity.

Mary: I don't know if we'll have enough time to talk. That may have to wait until the next day.

Me: Okay, open with it the next day, but all of the pieces need to be experienced as a whole—as a part and as a whole. As a teacher, we can't leave things.

I know myself. I constantly have to say, did I use all of the pieces? Can the kids understand and see the connections? Did I follow through to the end? They like that completion, and understanding why the connections are important. Okay, let's review what we are going to do tomorrow, and then we'll go. I'll get Quinn (pseudonym) to drive the zamboni through by 8:50.

Mary: You know what would be really cool, if I stood in front of the class with my curling iron, curling my hair, and you walked in with curlers in your hair! (PC 02/26/07)

Mary was starting to loosen up. Rather than having the students sit for most of the hour, Mary was becoming conscience of the time that students were sitting in one place. She was also contributing to adding the situational factor of humor when she suggested that I come in with curlers in my hair.

Mary opened with the bell-ringer "How did the production of the Model T change the lives of American citizens between 1908 and 1927 (VT)?" Although Mary would ask questions of higher level thinking in her bell-ringers, the students' thinking was never heard or ever shared. Was it Mary keeping the students' thinking in isolation that caused the students to contribute little effort to their journal writing?

Despite opening with the routine journal entry, this day, however, was different for the students. When the students came into the classroom, the room was divided into seven sets of four desks. The fronts of each of the desks were facing each other to form a center in a pinwheel fashion. With enthusiasm, the students immediately rushed to seat themselves with their friends. Although Mary quickly regrouped them, using different colored Spartan heads (the school's mascot) to form new groups of four, the students were still smiling and their body language was more relaxed than when they were expected to sit in rows (VT). The fact that students become habituated to the physical landscape of a classroom may also be an important consideration in designing lessons to promote situational interest. The students' enthusiasm when they observed a

different physical arrangement in the classroom may be evidence that using the *novelty* and *surprise* to arrange the physical environment of the classroom may also be a factor that contributes to situational interest. The students were also exhibiting instant enjoyment (Chen Darst, and Pangrazi, 1999).

Even though the students were excited about the new arrangement of the classroom, Mary appeared nervous that the seating may threaten classroom control.

Folks! Folks! I better have your attention up here during the notes. Now, take out your notebooks (VT).”

Using the situational factor of *relevance*, Mary began with a review of the consequences and benefits of the automobile. Mary asked “How did the automobile improve the social life of American citizens (MIS)?” What was startling was that more students than had ever before been evidenced on the video tape had raised their hands. One student volunteered that it allowed people to see their relatives more often. Another stated that it allowed people to get more involved in church activities. A third student pointed out that now people on the assembly line were working more closely together than when everyone was on a farm. A fourth student stated that there were more opportunities for people to do different types of recreation (VT).

Despite the consequences and benefits of the automobile not being ranked by the students as commanding high attention or interest, their willingness to proffer their thinking may indicate that the novelty of the activity may have triggered wonderment in their thinking. I noted in my field notes “If the students were responding to reading their textbooks and taking notes, would they have volunteered these insights (FN)?”

Okay, folks! Look up here. I want to see everyone’s faces (VT).” Mary said as she pointed to the notes on the overhead. Mary was not secure with the seating arrangement. It was a

novel arrangement to her teaching approach. She suspected that being so close to each other would distract the students from attending to and taking the notes that she was about to deliver. This may suggest a paradox. For example, does a teacher's comfort level with creating disturbances or novelty have to become somewhat habituated to observe if such variables in lesson design influences the students' situational interest.

“I better not see any backs, and I want to see everyone writing. C'mon we need to get through this so we can get to our activity. (VT)!” She instructed sternly. The students all turned toward her and did as they were instructed. Mary was using the activity as a carrot. Was she observing that the students were looking forward to the activity? Does the novelty of the seating arrangement contribute to Mary feeling that she must issue more commands to keep the students attentive to taking notes? This may indicate that using novelty in the physical arrangement of the classroom may create a tension in the purpose of creating situational interest until the teacher is secure with the outcome of using such a variable.

Mary explained how paved roads were now crisscrossing America and how houses were being built with garages and driveways on much smaller lots. She told them how urban sprawl was occurring and how by the late 1920's about 80% of all registered vehicles in the world were in this country. She noted how airplanes were now becoming popular but was only used to carry the mail. As she was explaining the feats of Charles Lindbergh and Amelia Earhart, in came the janitor with the huge cleaning machine. Mary never acknowledged what was happening. She stepped in front of the janitor who was pacing back and forth at the front of the room with the cleaning machine. Mary shouted loudly “Electricity became big, and American's standard of living was such that now the average American could afford stoves, refrigerators, toasters, washing machines, and vacuum cleaners (VT).”

By treating the janitor’s behavior as normal, Mary was threading the situational factor of *humor* into the learning sequence.

The student’s eyes were fixed on the janitor, who was mechanically pushing the huge machine back and forth across the front of the room. Some students would interrupt their stare by rolling their eyes at their neighbor. Most of the students were smiling. Others just shrugged their shoulders. All of their stares followed the janitor as she exited the room (VT). The dimensions of *attention* and *instant enjoyment* were apparent in the video. The situational factor of humor caught the students’ situational interest.

The students put their notebooks away and watched Mary as she went over and pointed to a vacuum cleaner in the back of the room.

“Okay! Listen up! A lot of electrical appliances came into being. If you look around the room, I have brought in a number of electrical gadgets. Mary went to over to the vacuum cleaner and said “How was cleaning done before electricity? I had the janitor come in with the big cleaning machine—how were schools cleaned before electricity (VT)?” she asked. Mary was using *relevance* to engage situational interest.

A few students volunteered that people used brooms. Mary explained how her mother would hang her rugs on the clothesline and beat them with brooms for hours. Then, she pointed out the paper that was on the desktop in front of them.

“Each of you will fold the paper long-ways. On the top left, you will write ‘Then.’ On the top right, you will write ‘Now.’ I’m going to go around and each group will select two cards. These cards will stay at that station. On each card is a subject, like ‘Meals.’ For example, you are going to brainstorm and describe how meals were prepared before electricity and how they were prepared after electricity was invented. Then, ask yourself, has electricity had any impact on the

types of meals that were prepared then and are prepared now? You will do this for both cards at that table. You will have six minutes to complete each table. Then, you will move to the next station and respond to the cards at that table. Are there any questions? For instance, we now have curling irons.” Mary holds up a curling iron. “How was hair styled back then?” she asked the class. We were using the “then’ and now theme to establish *relevance*.

At this point, I charged into the classroom. My hair was all rolled up in huge curlers. The students broke out into laughter. As I started to take the curlers out one by one, I had explained to the students how it was when women would have to shampoo their hair at night and how they had to sleep on these rollers to be beautiful. I shared a few stories about how times have changed, even since I had gone to school. I explained how in my chemistry class we computed problems with a slide rule and that only the rich could afford calculators. When I had taken all of the curlers out of my hair, I left the students to do the activity. The students were laughing and their eyes never left me as I told them the stories. Again, *Attention* and *Instant Enjoyment* were observed.

“Okay! I want this done before you leave here. I’ll be moving around checking your work and answering any questions. Kyle, turn off the lights. We will be doing our work from the light from the windows just like they did it in 1900.”Mary said.

The students completing the activity only with window light was using a *novel* approach to teach the value of electricity.

Immediately, the students all were engaged in the activity. At each station, the students were helping each other come up with answers. Some students giggled, while others were intent on sharing their answers. Most were relaxed and smiling. Only two or three students were distracted and took advantage of the sense of freedom that accompanies group work. The time

mandate at each station encouraged the students to stay focused and on task. At the end of the activity, Mary asked the students to respond to three consensograms that were placed on the back wall of the classroom. Although the lights were off in the classroom, there was a different light that was being cast over this old neighborhood. This was a high level perturbation and the students cited this as a high interest activity.

In the students' interviews, I asked "Would you say the activities didn't catch or hold your interest, caught your interest and then it went away or were there any activities that caught and held your interest (MIS)?" A majority of the students (n=12) pointed to this activity as catching and holding their interest. One student said "The electricity one held my interest. I don't know what I would do without it. It was interesting to see how people had to make it back then (MIS)." Another student stated "Some of the activities held it. The electricity one did. Some activities got it for a little bit, and then it kept repeating it. If we had moved on with more stuff, I think it would have kept my attention longer (MIS)." Another student said "Yes. The electricity one (held my interest). Because electricity is a big necessity now and when we were working without electricity, it was a lot harder. I wanted to think about it and see how they did it back then (MIS)."

In the students' responses, *novelty* was a recurring theme. First *novelty of the content* made the student curious—"I wanted to think about it and see how they did it back then." The *novelty in experiencing the content*—"It was interesting to see how people had to make it back then." Finally, students wanted novelty in the variation in an activity—"If we had moved on with more stuff (in some of the activities), I think it would've kept my attention longer." I would use these perceptions to anchor future learning sequences to observe if it would be consistent in catching and holding students' interest.

Humor was also category that emerged with this activity in the student interviews. When I asked the students in the interviews “If learning has been fun?” in the student interviews, a number of students pointed to this activity. As one student stated, “Yes. The energy one, when you came in with the curlers that made us laugh because you don’t see that much anymore—the ones that you had to sleep with them in your hair. Now, we do it in a half hour and it’s done. Then, we thought about how people used to wash their clothes and how easy it is now. And the labels and how now we know what name brands are and what they were like back then and how they are better now (MIS).” Again, *novelty* and *surprise* in *humor* was indicated when the student said “...you don’t see that much anymore.”

The most common student response regarding this activity that had emerged was *relevance*. The students felt that the activity made them examine the role that electricity played in their own lives and think about what it was like to live without it. One student observed the activity this way “The ‘then’ and ‘now’ was important in the electricity one because history has a way of repeating itself. If our electricity ever goes out, we could learn how to deal with it from what they did back then (MIS).” Another student stated, “The electricity one caught my attention because it put us back when we did not have electricity (MIS).” A third student stated “It has been interesting because we learned about appliances during that decade and the impact they had on the people, like how they had to clean and stuff (MIS).” The students wanted the learning to be relevant to them, but what does that mean in designing the learning sequence?

The students thinking made me ask in my field notes, “Can situational interest be elicited when relevance is added to the learning sequence by removing certain parts or elements of a student’s reality and making him/her adapt his/her thinking to a new frame of reference. For instance, if a student is asked to live an entire day without any electricity, would the novelty or

the surprisingness of the situation hold his interest? Or if students had to devise a battle strategy for a war that could only be waged with words or a war that could only be waged with nonverbal behaviors, where they would have to define the battleground, the plan of attack, the artillery--- would this engage interest (FN)?” Did this description of a war with only words or nonverbal behaviors catch and hold your interest as a reader?

When Mary and I reviewed the tape, I asked her if she saw confirming or disconfirming evidence of situational interest. Watching the lessons unfold was changing Mary. She was finding value of having the students involved and interested. This is evident in the following excerpt from our Think Aloud session.

Mary: It all came together here. With exception of those two right there (pointing at two students on the tape), we have them. Almost all of the students are involved. They're working and they seem like they don't mind it. On the consensograms all but a few said they liked this activity and found it interesting (TALS).

Mary felt that the learning sequence “all came together here.” Mary associates *engagement* with situational interest when she makes the observation that all but two students were involved. She also notes that the students are working and don't seem to mind it. This may indicate that when students appear not to be bothered by working that they are experiencing situational interest. Mary further indicated that the data on the consensogram supported that most of the students were interested in the electricity activity.

When I asked Mary what her perception of the activity was, she stated that she thought more variation at each of the tables would've made it even more interesting for the students. Consider the following excerpt.

“If I had it to do over, I would think of different activities for each of the stations. Even though the kids liked it, I think it got to be too much of the same thing.” Mary said.

Mary would have varied the work stations if she had it to do over. She wanted each station to be more novel. Novelty, change, and surprisingness, again were surfacing as categories for teachers to seriously think about in designing a learning sequence. Frequently interrupting routine or sameness appears to be related to engaging situational interest.

Finally, I asked Mary if there was anything that was salient as she reviewed the tape.

“I really like this one. It has potential. The kids are relaxed and like working together.”

Mary noted. Mary was seeing that the situational variables of *social interaction* and the individual variable of *belongingness* (Bergin, 1999) as having potential in creating situational interest.

The consensograms also told the same story. Out of the 20 students present, eighteen of the students found this lesson interesting and enjoyable. It was also an activity that created a desire in many of the children to explore the topic further. Consider the following table that represents the data from the consensogram (see Table 5.5):

Table 5.5: Consensogram of Electricity Activity

Question	I wanted to find out more about what we were learning today	I was interested in today's learning experience.	I enjoyed today's lesson
Strongly Agree	8	14	12
Agree	10	4	6
Undecided	0	0	0
Disagree	1	1	1
Strongly Disagree	1	1	1

The electricity learning sequence caught/triggered and held the attention of most of the students. The work stations were too much of the same. More novelty was needed from station to station. Varying the stations may have contributed to even more interest. Using the collative variables of *surprise* and *novelty* contributed to creating the students' situational interest. The situational factors that were used were *humor*, *social interaction*, and *movement*. The individual factors were *relevance* and emotion. The students identified *humor*, *novelty*, and *relevance* as contributing most to their situational interest. The dimensions observed in this learning sequence were engagement, attention, instant enjoyment, and exploration intention (Chen Darst, and Pangrazi, 1999).

5.2.3 Surprise, Novelty, and Ambiguity: Advertising in the Twentieth Century

To teach the dawn of modern advertising, Mary and I used the collative variables of *surprise*, *novelty* and *ambiguity* to engage *situational interest*. The situational factors used were *food*, *social interaction*, *movement*, *hands-on*, *discrepancy*, *discussion*, (Bergin, 1999), and *sufficient background information* (Schraw, Flowerday, and Lehman, 2001). The individual factor was *relevance*.

When the students came into the classroom, there were five work stations with four desks at each station. Mary and I used novelty in the physical arrangement of the room. As the students entered the classroom, their expressions signaled that they were happy that the desks were not in rows. Although the students had seated themselves with their friends, Mary used the months of the students' birthdays to arrange the students into groups of four. On the top of each desk was an advertisement. At each station were two actual ads from Life Magazine from the 30's and 40's, and two advertisements from a current magazine. To create ambiguity, the product that was being advertised was blocked out of each ad. The students would have to use the clues from each

ad to decide what was being advertised. The “then” and “now” theme was used to establish *relevance*.

Mary opened with the journal question “What makes advertising successful (VT)?” After a few students responded in their journals, Mary covered a few notes that explained the role of advertising and why it was needed to sell the various appliances that were just coming on the market during this time period. After the students had put their notebooks away, Mary explained the activity.

“Today, we are going to be looking at advertisements—some modern day and some from the 30’s and 40’s.” The students were picking up the advertisements and sharing their perceptions with each other (VT).

“Okay, listen up, folks!” Mary said over the students’ excited chatter.

The night before, Mary and I had made up a work sheet to record the students’ perceptions. I suggested to Mary that we have a learning tool that required higher level thinking skills to create a higher level perturbation.

Mary proceeded with the following instructions as she passed out the work sheet to each student:

What you are going to do—like yesterday—you are going to fill out this sheet. Everyone needs to complete the sheet. As you will notice, the sheet asks you to respond to three questions about each ad. You can also use the back of the paper to answer. From each ad, we have taken out the words that said what was being advertised, and we have left only the picture and a few of the words that describe what the product is that is being advertised. Okay, listen up! The first question on the sheet asks you to tell me what you think the ad is advertising. The second question asks you to explain to me what evidence in the ad leads you to believe this. The third question asks you to explain the strategy they are using to sell this product. Okay, you have ten minutes at each station before you switch. You can help each other out—let’s get going! Are there any questions (VT)?”

None of the students had questions. The students immediately picked up an ad and started studying it for clues. To integrate the situational factor of *food* (Bergin, 1999), Mary passed around candy to all of the students to eat and enjoy while they worked. Throughout the thirty minute activity, all but one of the students was engaged. The situational factor of *social interaction* was evident. The students were all helping each other arrive at answers, and they were working together to complete the questions for each ad. When all of the students had finished all of the work stations, Mary conducted a *discussion*.

“Use your papers and tell me what the ads from the 30’s and 40’s are using to sell the products (VT).” Mary said. Four hands go into the air. This number of hands in the air is more than usual. In the video, the students are obviously using the learning tool to assist them in the discussion. This may indicate that interest in participating in a discussion is influenced by a learning tool that requires a student to record his/her perceptions.

“Ryan, what do you think (VT)?” Mary asked.

“I see them using a lot of pretty women (VT).” Ryan replied. All of the other students laughed.

“Do they use the women in the ads in the 30’s and 40’s (VT)?” Mary asked.

“Some did (VT).” Ryan responded.

“Then, who are they targeting (VT)?” Mary asked

“The guys!” several students exclaim.

“Let’s say in modern times. What would be the best way to try to get people to buy a cell phone (VT)?” Mary asked the class.

Five students had volunteered answers, ranging from “Show them text messaging” to “A cool song on the ringer (VT).”

“What if you wanted to sell a car to someone under the age of 24?” Mary asked.

One student said “Show how much gas mileage.” Another said “Use girls in the ad.” A third said “Show how fast it goes (VT).”

Mary asked “Now, what if it is in the 20’s and you are selling the model T. How would you sell it?”

One student responded “Show the people going shopping.” Another student said “Have the family going to the movies (VT).”

“Now, listen up! Here is your homework assignment. You are going to draw two advertisements. One of your advertisements is going to be selling a new 1927 Model A. You can go on the internet to help you get more information for your ad. On the other side, you will draw an ad to sell a 2007 car. Now, who will your ad target? If your last name starts with one of the letters A through L, you will target people over the age of 40. If your last name starts with M through Z, you will target people under the age of 40. This will be due tomorrow at the beginning of the hour. I’ll also be collecting notebooks tomorrow (VT)” Mary instructed the class as the students started packing up their belongings.

On the video, there is groaning from the group that was required to target the over 40 crowd. Mary in this instance did not give the students a *meaningful choice* as suggested by Schraw, Flowerday, and Lehman (2001). The groaning from the group that had to design an ad for the over 40 age group may support Schraw, Flowerday, and Lehman’s claim (2001) that students being provided by meaningful choices influences *situational interest*.

As the students were awaiting the bell in the last few minutes of the class period, they were all visiting with each other. As we were closing in on two weeks of the study, a strange phenomenon was occurring. The study group, or our “hooligans,” was growing closer to each

other. The group activities were allowing the students the opportunity to get to know each other's perceptions, and these shared perceptions was creating a sense of belongingness among them. As the video replays, the students' movements are no longer stiff and rigid. Their postures are more relaxed. They are smiling more. Like a quiet classmate, the video camera stands in the corner of the room recording their every move; but now, it gets little notice from the students. The students are busy, and their faces suggest that United States History is no longer an enemy that lies waiting every second hour to ambush them with boredom. As one student stated in the student interview "The learning has been a lot more interesting compared to the beginning of the year. It really has grabbed my interest to go to class and to learn what we are doing that day. Instead of 'Oh! Here's another class. We're going to be reading out of the text!' But for the last three weeks it has really grabbed my attention to want to go to that class because I know it's going to be something fun (MIS)!" In this excerpt, the student is pointing to the dimension of *attention* as a facet of situational interest. These were the subtle signs that situational interest was starting to blossom in this old neighborhood (VTI).

Although this activity was cited by most of the students (n=13) as catching and holding their interest, some of the students felt that more *novelty* and *change* in the activity would have incited greater interest. Consider the observation of one student, "I would make it with better advertisements—things that were more exciting. They were dull (MIS)." I asked in field notes "Was it that the student had to examine 20 ads, 10 from the 30's and 40's and 10 from now, that created the perception of dullness? Would the activity have been more engaging if only one work station dealt with discovering what the advertisements were selling and we created other work stations with different activities about advertising (FN)?" As the researcher, I should have

created different activities at each station, using different variables. Other students provided further evidence of the need for variation.

Another student complained that there was too much writing involved. When I asked him if this activity caught and held his interest, the student responded “It did, but there was too much writing involved. A couple of the questions seemed to be repetitious. It seemed like I was writing the same stuff forever (MIS).” Knowing when the students are experiencing too much of the same activity is a consideration that often goes overlooked in designing a learning sequence—when is enough of one thing enough before it contributes to student boredom or the lack of student alertness that accompanies habituation. What is emerging is that repetition detracts from situational interest; whereas, the categories of variation and *novelty* in the learning sequence are consistently emerging as factors that contribute to situational interest.

The *ambiguity* of the lesson was also contributing to holding the interest of the students. When I asked the students if taking out what was being advertised and leaving only the clues made them more interested in wanting to observe the ad, the majority of students answered “Yes. (MIS)” As one student answered “Yes! On one of the shampoo ones, I thought they were advertising jeans. It made me think—they were not advertising the hair. Her hands are in her hair so this is one with her hair (MIS)).” Another student put it this way “Yes. I liked that because we got to talk it over with a group beforehand. Then, we looked on the back if we didn’t know the answer, but it was fun because if it wasn’t right, it was close—because we knew what a lot of them were (MIS).” I had not discovered until after the class was over that Mary had written the product that was being advertised on the back of each of the ads. Although the ambiguity was enticing situational interest, I had to ask if the students had not been instantly gratified with

having the answer on the back of the advertisement if there would not have been more of a holding experience in their situational interest.

Finally, a great number of the students (n=10) pointed to the fact that because the ads were primary sources that it attracted their interest. When I asked if the real advertisements from a publication during that time period played any role in attracting their interest, one student replied “Yes. Seeing some of the advertising from back then and now—comparing it was different, but they still made you think (MIS).” This student was also indicating that the collative variable of *change* was contributing to his interest level. A second student stated “It allowed us to see the ads back then and what they were like (MIS).” Another student put it this way “It was pretty neat to see how they used to advertise and stuff.” Using the “then” and “now” theme to establish the individual factor of *relevance* was also being supported by these students excerpts.

I questioned in my field notes “Is it that primary sources are *novel* to a student’s everyday experience that attracts their situational interest or are these excerpts supporting the claim made by Schraw, Flowerday, and Lehman that the *sufficient background information* elicits situational interest (FN)?”

When I later viewed the video tape with Mary, several categories emerged from her perceptions of the activity regarding situational interest. Consider the following excerpts from the Think Aloud Sessions:

Me: What sense are you making of the excerpt on the tape?

Mary: I think this particular activity with this class; they were very engaged in it.

Me: Why do you believe they are engaged here?

Mary: Well, based on the fact that they all seem to be working, but also when I checked their papers, they all seem to understand it well and get a lot out of it. Not just based on this observation, but also on what was turned in as well. (TALS, 3/30/07)

Mary was viewing *engagement* as a dimension or evidence of situational interest. Mary relates engagement to seeing all of the students working. Mary provides further evidence of engagement when she points to checking the students' papers and observing all of the students seemed to understand the subject matter and "get a lot out of it." To Mary, cognition and valuing subject matter are evidence of situational interest. As we proceeded, more perceptions of situational interest are revealed in our Think Aloud Session.

Me: Do you see confirming or disconfirming evidence that students are experiencing situational interest?

Mary: Sure! Well, we have Nathan over there grabbing things from other people. Usually he's doing that, but this time he's actually grabbing something for the assignment. I don't think we are going to change behavior, but he is finally doing what we are doing.

Me: Is this the first time you are seeing his behavior change?

Mary: Well, normally he is kicking somebody's chair or doing something annoying. This time he wants to get in all of the assignments. He likes what we are doing. (TALS, 3/30/07)

Mary uses Nathan as confirming evidence of situational interest. Mary observes, that Nathan is not "grabbing things from other people" as he usually does in class; rather, he is finally doing what the class is doing. Mary sees that when a student who is normally disruptive is now *engaged* as evidence of situational interest. Mary also points out that Nathan now wants to get in all of his assignments, and he likes what the class is doing. He no longer is spending class time "kicking someone's chair" or doing something annoying. I knew this was significant. A person changes what he does when he changes what he believes. Nathan was changing what he believed about doing his assignments. I wanted to know how Mary perceived the role of ambiguity in eliciting situational interest.

Me: How do you view the role of the collative variable in the activity, where the kids have to fill in the gap? Do think that is contributing to the interest level?

Mary: I think that's contributing, I also think that the interest level is higher because they are looking at the ads from the 1940's and that is interesting to them.

Me: What other clues are you observing that provides confirming or disconfirming evidence that kids are interested?

Mary: I see kids listening to each other, and looking at the ads. They seem to be interested. They are not just completing the exercise. It looks like they are interested in what they are reading. I think it's that they are using the actual advertisements, and that they are working in small groups and are moving, I think that helps a lot.

Me: What about the gaps—do you think that attracted the kids' interest?

Mary: If I do this again, I won't have the answers on the back. They were looking. The first group didn't know, but by the time they got to the second one, they were all flipping and looking. (TALS, 3/30/07)

Mary felt the *ambiguity* in the activity contributed to the students' situational interest. She thinks, however, the primary sources created more interest than the ambiguity. She also sees the students listening to each other and looking at the ads. She notes that the students appear interested in what they are reading. Mary suggests the situational factors working in small groups or social interaction, movement, as helping a lot in holding situational interest. If Mary did this activity again, she wouldn't provide the students' access to the answers.

Me: If you had to rate this activity out of all the activities so far in engaging situational interest, where would you put it?

Mary: Probably in the middle, and the only reason is because the kids weren't physically engaged as much as others and that really seems to draw them in.

Me: So are you seeing a high connection to mobility and situational interest when we are designing an activity?

Mary: Yes—especially speaking of this particular class. (TALS, 3/30/07)

Mary felt this was an activity that elicited only a modicum amount of situational interest in comparison to the other activities. She attributed this to the fact that the students weren't as "physically engaged" as some of the other activities. She felt that because the class consisted of mostly boys and many special needs students that mobility must be highly considered when we designed learning sequences to engage situational interest. Mary saw a connection between the novelty of physical movement and the tactile kinesthetic nature of this class. Mary was also was observing changes in the behaviors of students who were ordinarily not attentive.

Me: After you do this activity for the advertising, you have a *discussion* next. How do you make sense of this excerpt in terms of student interest?

Mary: We are trying to culminate it all before I give them an assignment. We are trying to show how in order to target a certain audience or a certain group of people you have to use a specific strategy in the advertisement. Here, I had kids involved in the discussion that normally wouldn't be involved or answer anything. This one here in the yellow, very rarely would he answer anything in a serious manner. It was always in a smart aleck way. He was actually raising his hand and wanting to answer the questions. The boy up front next to Chad, too! Two or three were answering questions that normally would not get involved at all, and they actually completed the assignment as well.

Me: And normally they don't?

Mary: They do, but it is always the absolute minimal. But they put more into it, where they normally wouldn't do that much. (TALS, 3/30/07)

Mary noted that students were involved in the discussion who normally would not participate. She observed two or three students who never answered questions were now answering questions with a serious intent. These students were also completing assignments. Normally, these students always did the absolute minimal in their course work. Mary was crediting these behavior changes to the students experiencing more situational interest in the content. Mary was beginning to notice the signs of spring in this old neighborhood.

Mary: I am interested to see how they do tomorrow on their tests. I am anxious to see how they do on the essays—if they can put the whole story together. I am not worried about the multiple choices or the rest as much. If you are a good test taker, you can figure the rest out. That doesn't mean as much to me.

Me: Will you look for cues in the essays that the activities triggered the information?

Mary: Yes, that's where I am going to look. (TALS, 3/30/07)

Mary was interested in understanding if the activities would act as a scaffold that would assist the students in putting “the whole story together” in an essay. She was going to look for clues in their essay answers to see if the activities were triggering better cognition of the story. Before the video ended, I wanted to know why Mary felt the learning sequence was contributing to more participation from students who were normally disengaged.

Me: Why do you believe the activity that is contributing to an increase in the amount of participation?

Mary: I think the activity allowed more kids to participate because they were able to understand. I think having the original resources was big. If you hadn't had those magazines I wouldn't have had those resources. I could have cut some out of *Time*, but having the original source was very meaningful to the kid. (TALS, 3/30/07)

Mary relates the students' participation in the activity to the students' ability to understand the subject matter. She also suggests that having the original sources was very meaningful to the students in the activity.

The video ended. Mary was attributing the increase in situational interest to the students' better *cognition of the material*, and the *use of primary sources*. Bergin (1999) cites *competence* as an individual factor that engages situational interest. Mary's observation supports such a claim. Both Bergin (1999) and Schraw, Flowerday, and Lehman (2001) also make the case that background information is a contributing factor in situational interest. Mary's perception that the

primary sources contributed greatly to the students' interest level may also support this finding. The earlier excerpts suggest that the *ambiguity*, the *social interaction*, and the *movement* from station to station all contributed to the students experiencing *situational interest*. For this particular class, she saw *movement* directly related to the level of situational interest that was being experienced by the students.

In my field notes, I asked "Is it the change from note taking and the novelty of what was being experienced in the learning sequence that is contributing to the students' change of behavior? If a learning sequence was unpredictable every day and every hour, would students become habituated or numb to the unpredictability? Are the use of the collative variables and the situational variables in the learning sequence causing content to stick in long term memory (FN)?" With subtlety, our thoughts were growing in this old neighborhood.

5.2.4 Change, Novelty, and Surprise: Belongingness and the Assembly Line

When I first selected situational interest as the focus for my dissertation, I had conducted an interest survey with all of the juniors at our high school. The assembly line activity in Mr. Dean's (pseudonym) history class had emerged in the data as the most interesting activity that had ever been experienced by the juniors throughout their high school career. I never forgot that. At the time, I was not aware that the sample group for my dissertation would be a sophomore social studies class. Even more, it was a fluke that the timing of the study occurred when Mary needed to teach the assembly line. I went and begged Mr. Dean for this lesson to discover if the collative variables were present in how the lesson was orchestrated. I asked him for the materials from a publishing company called Interact. I needed to study why the characteristics of this lesson elicited so much memorable situational interest.

When I went through the activity, immediately I understood that the lesson would be novel, surprising, and such an authentic simulation would be a change for the students. The learning sequence also included many of the situational and individual factors encourage in the work of Bergin (1999). The individual factors that would be addressed with this simulation were *belongingness, emotion, competence, utility-goal, and background knowledge* (1999). The situational factors that was included in this learning sequence were *hands-on, social interaction, modeling, humor, sufficient background knowledge*, (1999; 2001) and *movement*. This simulation had it all. I went and talked with Mary. Consider the following Planning Conversation:

I want to talk about what we are going to do next week. We can start with an overview and then talk about this Monday, and talk about it throughout the rest of the week. I asked Mr. Dean (pseudonym) for his Ford assembly line lesson from a company called Interact. I want to start integrating those categories that emerged in the survey. For some of the guys in this class that have been hard to reach, I want to see if this is going to be a good activity. We can do this any way we want. It is a simulation that includes a lot of the categories that had emerged on the survey. It is group work. It is *hands-on*. It is *novel*. According to Mr. Dean, he asks the kids to practice drawing the part on the car that they will be responsible for drawing on the assembly line prior to the activity. He does this after he gives them the overview of how the assembly line works. If you're interested, there is the video we can show them on the assembly line on the Henry Ford Museum website. I found it this morning. There are also questions he gives the kids after the activity. Here is the model T outline (hand it to Mary). Each kid is responsible for holding up there part and keeping the line going. He explains all of this the day before; then, the students are responsible for practicing drawing their part for homework the night before the activity. He does this activity after he teaches the assembly line and the role that it plays in America. I think this will be engaging for these guys. Mr. Dean puts this (transparency) up on the overhead, and each student is assigned to draw a part when the car comes around. The day of the activity, the room is set up like an assembly line and every worker is assigned a station. Then, you act like the supervisor, timing them with a stop watch. The kids must sign this contract (hand Mary the contract) that they agree to these terms and working conditions. Here is a schematic of how your classroom needs to be set up, I'll leave this with you and you can decide how you'd like it done. I think this will be a ringer right before we go off on spring vacation. Let's talk about what we'll be doing on Monday (PC, 3/23/07).

Mary agreed that the idea for the lesson fit the criteria for the study, and she thought it would be an excellent learning sequence for the study group. She was excited, and she agreed to prepare the students for the simulation on Thursday.

For the first half of the hour, Mary spent preparing the students to come to work on the assembly line the following day. She passed out and went over the contracts that the students had to sign to work at the Ford Assembly Plant (See appendix). The contracts were replicas of what the workers were required to sign in the 1920's. The Ford Motor Worker's Contract stated the following stipulations:

While I work for the FORD MOTOR COMPANY, I promise:

- to work hard at my job;
- to learn English and speak English;
- to accept the company directive advice; never drink; never gamble; and never pursue any malicious, derogatory, or immoral behavior;
- not to lean on the assembly line's machines or belts;
- Not to sit, squat, sing, whistle, or smile while on the job.

For obeying this code, I will be proud to work here and be paid \$5.00 a day for working 9 hours.

(Workers at Chrysler and General Motors are currently earning \$2.50 for their daily work.)

Signed _____

Date: _____ 1922 (*Interact Publishing*)

She also assigned each student his/her job on the assembly line (See appendix). Each student would be responsible for drawing a different part of the car. To get out production out in

an efficient manner and for quality assurance, the students were asked to go home and practice drawing the part that he/she was responsible for on the Model T. Second hour, which was designated as first shift, would be competing with second shift which was Mary's fifth hour in terms of the number of Model T's that were built as well as the quality of the product.

For the last half of class the students were taken down to the school's annual Coffee Haus event. This is an event in the school's library where the students showcase their poetry and music. In addition, the librarian uses the event to point out to the students the most recent collection of authors that have been added to the library. The students are allowed to drink coffee and eat cookies while they listen to their peers' music and hear their peers' poetry. Willing teachers also showcase their talents.

5.2.4.1 Novelty, Surprise, and Affect Create Situational Interest in the Model T

On this day, I wrote the following excerpt in my journal:

When I was young, I would tune my guitar or dulcimer. While strumming the string, I would turn the key that determined the tautness of the string. A number of sounds would struggle to fill the air. Sometimes I would hear sounds coming from the ill-tightened strings that I did not want to hear. I would continue to adjust the string, tweaking the sounds until I would hear that one special sound that provided the instrument with its ability to make sense of its sounds—and so it goes in this grounded theory study. Today's lesson, however, was finely tuned in eliciting situational interest. Although Mary and I did not design this lesson, the *surprise* and *novelty* struck a chord in the students that resonated and filled the classroom with undeniable situational interest. I have to discover its magic. (JE)

On the outside of Mary's classroom, a giant five-by-five sign read "Ford Motor Company." The desks were arranged in a zigzagged line. As our "hooligans" entered, they were grinning from ear-to-ear. Their faces were flushed with excitement, and they were filled with anticipation for what was about to come. Today, there would be no notes in notebooks. There would be no journal entry. They were all coming to work on the assembly line—just like it was back in 1922. Mary was dressed differently as well. She had a clipboard in her hand and a stop

watch that hung around her neck. As the twenty students filed into the classroom, Mary was busy placing each student at his/her position on the assembly line. She was excited as well (VTI).

“Okay! Okay! Is everyone in their spots on the line? We’re going to do a practice run! Everyone must stand up—no leaning on the machines! These people who worked on the assembly line worked at waist height for nine hours a day. They could not squat, sit down, or lean against the machines. I expect you all to follow the rules or you’ll be out of work!” Mary loudly instructed the students on the line. Mary continued to give the students directives (VT).

“Okay! Quiet please! We’re going to do a practice. You will do your part and quickly move the car along to the next person who will draw their part on the car. The supervisor—me—makes sure the line is running smoothly. The line is about to start up for a practice run so you must be silent and concentrate on your work! Ready! Go!” Mary yelled (VT).

All of the students were waiting silently for the cars to start rolling down the line. After the students had conducted the practice run, Mary explained to the students how the assembly line is different now. She pointed out to the students how now the line was more automated, but that back then the people’s job performance was only as good as the health of their bodies. Once again, she covered the terms of the contract that the students had signed the day before (VT).

“Okay! I want to see some good Model T’s rolling down that line—and remember, no sitting, squatting, singing, whistling, or smiling while on the job! On your mark! Get set! Go (VT)!” Mary yelled.

The students were working hard to draw in their piece on the Model T and send it to the next person waiting on the line.

“You have to work faster!” Mary barked out like a foreman at the plant.

If a student had finished their job and was waiting for the next car to roll down the line, they would run over to help out the painters who had more of the car to cover.

“I don’t want to see the quality of those cars going down because you’re leaving your spot on the line—hey! They’ll be no talking on my shift (VT)!” Mary ordered.

After twenty minutes, 16 cars out of 50 were complete. Mary asked the students to take a seat and debriefed the learning experience by asking the students for their feedback. She ended the lesson by surveying the students as to what was the most interesting activity in the last two weeks. She instructed them to write it on the back of their contracts or on a piece of notebook paper and explain why (VT).

Like the survey results four years earlier, the assembly line was perceived by the majority of students (n=17) in the study group as the most interesting activity. Three categories as to why this activity was perceived as the most interesting were salient. The first was the *novelty* of being able to experience the assembly line “first hand (ST)”. Seven out of the seventeen students who selected the assembly line activity as the most interesting in second hour held this response. This again may indicate providing *background information* in a *novel* way may be a powerful motivator of situational interest. The next category that emerged as being salient in the data was that “Everyone was involved (ST)” or “We were all working together (ST).” Six students posited that this was the reason for engaging interest (ST).” This supports the claim in lesson design the situational factor of social interaction and the individual factor of belongingness must be considered when designing lessons to engage interest. The novelty of learning the information authentically or “first hand” emerged as the variable that influenced situational interest the most.

The following table that represents the data from the survey provided by Mary to the students at the end of the class (see Table 5.6):

Table 5.6: Most Interesting Activity

Student Responses in 2nd Hour Study Group	Survey Question: “Which Activity Was the Most Interesting Activity?”	Key Phrases Why The Activity is the Most Interesting.
n=17	Assembly line	Learned how things were first hand n=7 Everyone was involved n= 6 It was “fun” or “cool” n=5
n=1	Advertising Activity	We had choices. n=1 It was fun. n=1
n=1	Immigration Activity	No writing n=1
n=2	No favorites	

After school, as I viewed the tape, I responded in my journal. I saw *belongingness*. This is evident in my journal entry.

Like the magnetic poles that pull fields of energy from one pole to the other, deep within us lies a peculiar dichotomy that is also pulled by two theoretical poles. On one side, when the environment is arranged from a behaviorist lens, man is pulled toward a state of mind that may be explained by Social Darwinism.

In this state, the competition and the individual recognition that accompanies answering correctly pulls us to sharpen our skills and flaunt our prowess. It is, however, a lonely and an isolated state. On the other hand, when the environment is arranged from a humanistic lens, man is pulled toward a state of mind where he desires human connection. Here, he experiences a sense of belonging.

In the old neighborhood of public schooling, the nature of the curriculum breeds competition between individuals and groups. It is driven by the scientific notion that it will result in social evolution. Rather than having children share in a think-aloud how they arrive at correct answers, children are encouraged and are quickly praised for arriving at the answer first. As a result, the child “puffs up” from the recognition that has been awarded for his/her mental keenness and the student’s thought processes that assisted him in arriving at the correct answer remain hoarded like prize possessions. Often, the teacher also “puffs up” with the assumption that the child was using the steps outlined by him/her in the lesson to attain the correct answer. When in reality, the child had arrived at an understanding of the scientific absolute using thought processes that at times had never occurred to the teacher.

This becomes an ever occurring cycle, and such a cycle only allows the brave and the correct to volunteer knowledge. It divides the class into the mentally strong and the mentally weak. In such an environment, those students who lack understanding do not feel safe volunteering their misunderstanding, and often, that is what the teacher prefers to see. This reinforces the misguided perception

that the instruction has allowed all of the children an understanding of the material.

I see it often (I do it myself). The teacher will ask “Does everyone understand how Robert arrived at the answer?” When no student raises his or her hand to willingly admit defeat aloud, the teacher is able to move on to the next concept. Although the teacher understands in the back of his/her mind that the probability of all of the students really understanding is slim, it provides the teacher the justification to move on to the next concept, leaving behind the students who are afraid to admit that they do not know. After all, no one raised his/her hand! Hence, there is little discussion in classrooms about how individual students are arriving at their perceptions. The teacher does not understand the cost of *not* encouraging such perceptions to be shared. If understandings of how perceptions are arrived at *are invited into* the learning sequence, it may have provided a forum that would have allow the students who did not understand with the possible means to understand.

As I watch this video, I do not see social Darwinism. I see Maslow. Despite competing with fifth hour to see who could make the most cars, I see our “hooligans” excited that *everyone is involved*. I see students finishing their jobs and running over to help the painters, who have been assigned more work than the others. I see them taking their jobs seriously. I see that they are *happy* that they are actually *able to experience what it was like on the assembly line in the 1920's*. I see situational interest. The moments in the classroom where students are forced to watch other students “puff up” for feeding back the right answer is not what

elicits and holds situational interest. When it comes to catching and holding interest, Abraham Maslow wins. It is *belongingness*! It is also allowing students to *experience the knowledge* of a moment in history together in a *novel* way that incites and holds situational interest. If this is so, why does this old neighborhood of public schooling continue to perpetuate lesson design that is repetitive and lonely? (JT) ”

In the student one-on-one interviews that occurred over the six week period, the Model T reigned as the activity that caught and held the students’ interest. It was perceived by 14 of the 20 student students as the most “exceptional” activity. Throughout all of the questions in the text if the student interviews, four categories emerged as to why this activity elicited the most interest. First, consistent with Bergin (1999), the “*hand’s- on*” feature of the activity was replete throughout the data (n=14). Second, the three collative variables of *surprise*, *novelty*, and *ambiguity* or “Had to figure it out” was cited often in the students’ responses (n=13) (MIS). Third, the fact that *all of the students were involved* emerged as an important facet of situational interest (n=13). Finally, the fact that “*It was real* (MIS)” kept recurring throughout the students’ responses (n=12). When I asked a student which activity was the most exceptional, he succinctly summarized all of the categories with his response when he stated, “Probably, the Model T. It was something we haven’t done since 3rd or 4th grade (*novelty*) It was *hands-on*, where we all had to work together (*social interaction and belongingness*) (MIS).”

Several students’ responses best summarize why the hands-on situational factor was an important feature in their creating situational interest. Consider the following excerpts:

Chad: Well, you were in there doing it. You were involved so you were learning while you were doing it. You weren’t just listening to the teacher. You were actually doing the activity. (MIS)

Bill: It was a big group thing and it was all hands on. (MIS)

Phil: The Model T because we were not just sitting. It is so boring to sit and take notes all hour. (MIS)

For Chad, actually doing the subject matter rather than listening to the teacher created his situational interest. Chad sees when students are involved with subject matter that they are learning while they are doing it. The source of Bill's situational interest was that it was a "big group thing" and it was "hands-on." Phil, on the other hand, is bored when he has to sit and take notes all hour. He suggests that he is interested in learning experiences that get students out of their seats. The above excerpts provide evidence that the situational factors of *social interaction* and *hands-on* are important considerations in designing lessons to engage situational interest.

The collative variables may have been indirectly referred to as contributing characteristics of engaging interest. The student responses react to novel or surprising features in the environment or in the content of the information that were part o the Model T activity. Consider the following student responses:

Chad: When we saw the big Ford Assembly plant sign outside Mrs. B's door, everyone was so excited to go to class. (MIS)

Bill: The Model T assembly line. We had to go through it pretty fast. We couldn't sit or do anything! We had to keep it going. (MIS)

Phil: The Model T because I like cars and how they started and what they did on the assembly line and how they couldn't talk or anything— that really caught my interest. (MIS)

The value of a teacher planting the collative variables to interrupt the routine of the environment is supported by Chad. He suggests the Ford Assembly Plant sign outside of the teacher's door contributed to the students' excitement or the students' situational interest. Since Mary did not routinely place big signs to advertise her lessons, this was a novel or surprising

event to the students Chad also points to *instant enjoyment* as being a dimension of situational interest when he says “...everyone was so excited.” Bill was surprised at the limitations placed on the workers. This is supported when he says, “We couldn’t sit or do anything! We had to keep it going.” Phil points out his interest is caught because of his personal interest in cars and because he was *surprised* that the workers weren’t allowed to “...talk or anything.” The information that was provided through a novel simulation resulted in affective responses that are rarely garnered by the routine and monotony of a textbook approach to instruction.

The next salient category that emerged was the *authenticity of the experience*. Over and over in the interviews (n=12), this was cited. Allowing students the opportunity to experience the content for themselves was linked to engaging situational interest. Consider the following students comment:

Tom: The Model T activity, and how the Model T is made on the assembly line and how we did it in class. We moved our papers around and the desks around and made it just like it was. It actually showed us what they did on the cars, and they couldn’t talk or sit down. It showed us how our backs hurt after 15 minutes but they did it for eight hours. (MIS)

Nora: The Model T activity taught you how you had to go through and build the cars. They built them as fast as they could to get them out there to sell. It taught me about Henry Ford and what he did in an interesting way. (MIS)

Ryan: With the Model T assembly line, we had to make sure we were doing our parts right so it would pass inspection and make sure you were keeping up. (MIS)

Despite Tom’s backache, his *attention* was commanded because the simulation “showed” the students what the workers did on the assembly line and the activity “made it just like it was.” Nora also felt having “...to go through and build the cars” taught her about Henry Ford in an “interesting way.” In an earlier activity (see advertising activity), Mary suggested that “when a student takes the content seriously” that situational interest is confirmed. Ryan’s excerpt shows

how having students simulate content may encourage the students to experience the content with seriousness. Consider the intensity in his remark, "... we had to make sure we were doing our parts right so it would pass inspection and make sure you were keeping up." This may suggest that a cognitive benefit of situational interest is that the students take the content seriously.

The last facet of the activity that emerged as contributing to situational interest was the *involvement of everyone* in the activity. It was not only pronounced in formal data collection, but in the asides made by the students to Mary and me. This caring on the part of so many students that everyone was involved in the activity took Mary and I by surprise. The individual factor of *belongingness* (Bergin, 1999) and the situational factor of *social interaction* (Bergin, 1999) were emerging as the most significant factors that influenced the high level of situational interest in this activity. What also should be noted is that this was not a high level perturbation that required higher level thinking skills.

The greatest level of situational interest that Mary and I had observed out of all of the activities was occurring in a simulation that allowed the students to experience an event in history together—the assembly line. The data supports the individual factor of belongingness influenced the students' situational interest. The characteristics of *belongingness* are represented in the following student excerpts:

Sam: I liked the Model T the best of them all because the whole class was involved. If one person didn't get their job done, the whole class was affected. (MIS)

Joe: With the Model T, we all got to do something and we all got to see how it would come out. (MIS)

Cathy: The Model T was the most interesting because everybody had a different part, and we could see how the faster you go how it affected the quality. I liked that everyone was doing something different but we were still working together. (MIS)

Sam liked the Model T the best because the “whole class was involved.” He points out that the failure of one person to do his job affected the whole class. For Joe, the Model T activity captured his interest the most because everyone in class was able to do something in the activity and all of the students were able to see together how it would turn out. Cathy likes that each student was doing something different yet the class was still working together. All three students attribute their situational interest to the experience of having everyone “work together” or the “whole class was involved” or “we all” got to do something. Everyone working together and having the whole class involved are characteristics of *belongingness*. This was not just social interaction. The situational interest here is being elicited by the experience of a human connection in working together or *belongingness*. This may indicate that routine seatwork isolates students and such isolation may distract from situational interest; whereas, *novel* or *surprising simulations* that provide students *with individual parts* to accomplish a common goal encourages situational interest. Reflecting on this data, I had to ask in my field notes, “If a number of lessons in a row were guided by *belongingness*, would increased situational interest continue to recur as a result of the students’ experiencing *belongingness*?”

To understand how Mary’s perceptions were very much aligned with mine and the students, it is important to examine the Think Aloud Session (TALS, 4/10/07):

Me: Let’s take from the top so we can talk this one through. This is the Ford Assembly Plant activity, where you actually created the assembly line. Let’s talk about it as we are watching it. Tell what sense you are making out of it as you are seeing it.

Mary: The only thing I can say about this activity is that for sure, 98% of the kids were excited about it!

Me: How were you sure they were excited about it (MIS)?” I inquired.

Mary: They came in and wanted to get started. I could hear them talking.

‘What are we doing?’ or ‘Oh look how this is set up!’ They walked around the room looking. There wasn’t anything different in the room that is normally in there. It was just set up differently. We had a sign up front that said ‘Remember the rules’, and they were upset. ‘You mean we can’t sit down?’ They asked. At the end of the activity, we talked. I don’t know if we caught that on the tape. I said how do you feel about this? And they said my back hurts. They were going through it, and I said well imagine how people were after nine hours, and they were thinking this was crazy. A couple of kids made little variations in what was going on to help others, and somebody asked if they could go to the bathroom. I said ‘What are we going to do--stop the line for you? And she said what are we going to do? And I said ‘I guess that car goes without a carburetor, and they were like ‘Hey, we can’t do that!’ It was interesting. The kids that weren’t as well prepared as other kids were stopping the line. You know. It was backing up, and they would yell ‘Come on! Keep going!’ I thought it was interesting that they said that everybody had to participate or something along those lines.

Me: That theme is coming up, over and over with this group. That’s why I am excited to interview all of the kids. Because in the kids perception, and the two kids I just interviewed, it was very important to them that all of the students were engaged, and that’s what they liked about it, that everyone was engaged at the same time. They liked that in an activity—when they see everybody wants to do it. That keeps coming up—this belongingness. I want to see what happens in the next few weeks.

Mary: Isn’t that funny?

Me: Yeah! We don’t think they care about each other that much.

Mary: Do they care or is it because they want everyone to have to do what everyone else is doing.

Me: No. It’s in their responses. The interviews are coming across that they care.

Mary: Okay! This one right here in the black shirt in the middle—he is the one who never does anything and somebody even said to me ‘Even he is doing it!’

Me: Yep—and they liked that. And it wasn’t about I have to and you have to. They just like the fact that everybody wanted to do it. I’ll know more if that is a consistent category as I move through all of the different students. I walked away Friday thinking about that driving home; this is something that came out of left field.

Mary: I will say one thing, though. This group, since we are doing this, with the exception of one or two kids, has really become family-like towards this.
(TALS, 4/10/07)

Mary observed the dimension of *instant enjoyment* when she reflected that 98% of the students were excited about the activity. She provides evidence of the students' excitement by pointing out that students were asking question about the activity before it was started, and walking around the room and examining the room's set-up. She made the observation that the students who were ahead of their work on the line were going to help out those who were behind. She also noted that students were cheering each other on to participate. Mary's observations of the students cheering each other on and helping each other when someone was behind in their job may serve as evidence of characteristics that create belongingness. Mary also finds it interesting that the students made the observation that everyone was involved in this activity.

When I pointed out that what was emerging in the interviews was that the students liked that everyone was involved, Mary found that to be amusing. She questioned whether or not it was more that the students wanted everyone to have to do the same amount of work. I pointed out that the evidence in the student interviews was showing that such group participation allowed them to care about each other. Mary pointed out that a student who never is involved in the activities was participating. This was even noted to Mary by a fellow student. Mary further commented that the study group was becoming "family-like." The data is continuing to demonstrate that belongingness and having everyone involved is a strong motivator in situational interest.

I proceeded to probe Mary about her perceptions of the students' situational interest. The dimension of *engagement* and the situational factors of having everyone involved in *the activity* and the *authenticity of the activity emerged*. Consider the following Think Aloud Session:

Me: What are you seeing here as a teacher in terms of situational interest?

Mary: Everybody is engaged. Even though it's an obviously modified activity from the real thing, it made a sense of what it was like. They are actually thinking about it. As I said, every single kid is doing it. No one is even thinking about not doing it.

Me: Are there any characteristics that you could see when building future lessons that you'd like to take away from what you see here to elicit situational interest?

Mary: Definitely! The idea that every kid is involved.

Me: What other characteristics of this activity that we could integrate in future lesson design that you feel is holding the interest here?

Mary: Well, the realism to the actual assembly line and the fact that the kids are up and moving.

Me: What other confirming or disconfirming evidence of situational interest do you see here?

Mary: Every single kid in class, regardless whether they are special ed, bilingual, or one of the top students that I have—they are all doing exactly the same thing. I don't have anyone who looks lost. I don't have anyone looking uncomfortable, like they don't want to be doing what we are doing. This is engagement!

To Mary, evidence of situational interest is seeing the students were *engaged*. She defines engagement as “every single kid is doing it,” “no one is thinking about not doing it,” no one looks “lost” or “uncomfortable” and “no one looks like they “don't want to be doing what we are doing.” Mary also identifies the situational factors that *every kid is involved* and *the realism* of the actual assembly line as strong considerations for designing future lesson plans to create situational interest.

There are days in spring when the signs of spring—the unsuspected pedagogical warmth in the air; the brilliant sunlight that is cast across the fields that are in transition; the subtle signs

of growth that no longer escape your notice—paint an optimism for the days to come. This was one of those days.

5.3 Week Three

The following table illustrates the activities designed with the activities and the dates that each occurred (see Table 5.7):

Table 5.7: Timeline of Activities in Week Three

Date	Tuesday 4/10/07	Wednesday 4/11/07	Thursday 4/12/07	Friday 4/13/07
Activity	History Basketball	Test	Decades Movie	Value Road Activity
Collative Variable	Incongruity Novelty		Curricular Obligation	Surprise Novelty

The following titles capture the essence of the activities in the second week of the study:

9. Novelty and Surprise in a Review Game : History Basketball
10. Novelty and Surprise to Teach Prohibition: Value Road

5.3.1 Novelty and Surprise in a Review Game: History Basketball

When we returned from spring break, I met with Mary in her classroom. *Games* appeared high on the list of interesting activities identified in the Out the Door Survey and was listed as a situational factor in the work of Bergin (1999). We wanted to observe situational interest when students were playing a game. Mary decided that we would add the collative

variable of *surprise* to how the history basketball game would be played. Unlike most games in the classroom where you are only able to participate if you have the correct answer, in our version of history basketball, the students would be allowed to shoot regardless of the correctness of their answer. We would also use *novelty* in the physical arrangement of the classroom. To increase what Mary perceived as a higher probability of engagement, Mary offered as a motivator the incentive that five bonus points would be added to the winning team's tests scores. Students who did not attempt to find the answer would not be awarded the points even if they were on the winning team. The students would be allowed to help each other and to use all of their resources to arrive at the answer. Further, every student on each team would have the opportunity to shoot the ball. The team with the highest game score would have five points added to the scores of the test that the students would be taking the following day.

Mary was busy taping lines down on the floor with masking tape for the history basketball review game. With the wastebasket serving as the basketball hoop in the front of the class, Mary stepped out distances to lay down the free throw lines. On each side of the basket were two lines that were four inches in width. The first line was approximately six foot away from the basket and that was the two point line. The second line was about ten foot away from the basket and that was the three point line. On the dry erase board was written "Team One" and "Team Two" It would serve as the scoreboard for the game. A "hacky sack" type of ball was used as the basketball. Once the students arrived and were split into two teams, they would be able to name their teams. Mary shared with me the list of review questions that she had prepared for the game. These were closely aligned to the content that would appear on the test. This would be a medium level perturbation.

When the students entered the classroom, the game was set up and the scoreboard was prepared on the board. The desks had been evenly divided into two teams. As the students filed into the room, excitement and chatter filled the air. *The novelty* of the environment immediately signaled to them that they would not be taking notes all of the hour. They all had observed the “History Basketball” sign taped to the board, the wastebasket that would serve as the hoop, the lines, and the ball that was sitting next to the basket. The students’ body language was filled with life and they were anxious to play (VTI).

After the bell, Mary had the students count off “One” “Two” until the entire class would be counted. She instructed all of the “Ones” to sit on the left side of the room and the “Twos” to sit on the right side of the room. Mary emphasized the rules of the game. Consider the following text from the videotape:

Folks! Folks! Okay! Listen up! Each team will be allowed to shoot after each question. You will not have to get the question correct to shoot, and every member of the team will have the opportunity to take a shot. As a team, you will decide if your team member will shoot from the two or three point line. Answering the question correctly is a free throw that adds one point to your score. If after fifteen seconds, the team does not answer correctly, the opposing team has the opportunity to make a free throw point by answering the question correctly. You will only be able to shoot the ball when it is your turn. Your team will also add the points from making the basket from the two or three point line. I will alternate, giving each team a question. The team with the highest score at the end will win the game. The team that wins will add five points to their test score when you take the test. You may help each other out, and you may use any resource that you have available. You have fifteen seconds to answer the question. Are there any questions? (VT)

Mary said, as she scoured the room for hands.

“C’mon! We’re ready to play (VT)” One student exclaimed.

“Okay! Folks! Listen up! Huddle together and agree upon a team name. Once you have a name, have someone from your group go up and write it under the “Team One” or “Team Two”

that is written on the board. Okay! Huddle up! The names must be appropriate and include something from the chapter. For instance, the “Harding Hobos” (VT).” Mary instructed.

The teams quickly huddled together and selected their names. It would be the Palmer Raiders (pseudonym) against the Steel Mill Strikers (pseudonym).

“Okay! Ready! First question goes to the Palmer Raiders. Explain how the Sacco and Vanzetti case reflected concerns held by many Americans during this time period (VT)?”

The Raiders quickly were looking through their notes and reporting out possible answers..

“Ten seconds (VT)” Mary announced.

The students were furiously consulting with each other and reviewed their notes. In the event that the Raiders couldn’t answer, a few students from the Strikers had their hands up to try for the free throw point.

“Five seconds—Time (VT)!” Mary announced.

“Who will answer and shoot for you team (VT)?”

The Raiders selected Joe to answer and shoot first.

Suspicion! They were Italian immigrants and were found guilty because no one trusted ‘em and stuff (VT).” Joe blurted out loudly.

“Okay. Correct. Come up and take a shot. When you’re done place your score on the scoreboard (VT).” Mary said.

The students cheered Joe on as he came up and landed a basket from the two point line. The Raiders now led by three points, two for the basket and one for knowing the answer. It was now the Strikers turn.

As I viewed the tape, I noted in my journal. Consider the following entry:

We are a strange lot. Genetically, scientists have proven that modern man is wired with the same primal brain that was typical of that of the hunter and gatherer. I see that here. For fifty minutes, each team went back and forth, working together with attention and focus. The students were excited, interested, and engaged. They had one goal in mind—"To be king of the jungle." Many of the students were adding drama to their shot-taking, showing off their athletic prowess. The winning team was rubbing it in as the shooter was making his way to his desk with comments like "We're smoking you guys (VT)!"

Yet, I see moments like when a special needs student went to take a shot. Immediately, the "survival of the fittest" mentality fell to the wayside. It was hearts speaking to hearts. Both teams wanted to protect the weak and the vulnerable. All of our "hooligans" wanted the students who are so often the brunt of ridicule to feel like an important part of the game. They were valuing. Again, I was seeing the importance of the individual factor of *belongingness*.

I saw Maslow in the students' actions. I saw this diverse sophomore class, made up of mostly males, take pause from the competitiveness of the game to watch out for each other. As different as they all were, this study group was forming a strong bond. Why? Does the teacher facilitate such behavior? More specifically, is it Mary's protective leadership? Is it the study? When I had asked a student in the interview if he felt more of a bond between his classmates, he answered "Yes. It helps to know and find out about the person and how they work. It makes you close with the people you work with (MIS)." Whatever the causes, I have observed an ongoing vacillation between the need for competitiveness and the need for human connection. Affect, however, always seems to win. As teachers, we must use these observations to enrich lesson design.

I see the same reality in my classes. When I tell them we are going to play a game, the students will ask 'Ms. Morgan, can we all get something for playing?' And I say 'Of course.' Although they want to win, they do not want the other students to feel bad for not winning. When we play this way, it contributes to more situational interest and engagement because the students feel that they all have a stake in the game. This I know.

What I don't know is the role that this heightened situational interest plays in the understanding of the material. Although the students are working hard at finding the answer, more attending from the students is on making the basket. What concerns me is that making the basket appears to be a separate act from the feedback of knowledge. Mary and I did not consider the integration in designing the learning sequence; hence, will the brain treat the two acts separately, giving more attention to what was the focus of higher interest. If so, we are teaching basketball. I must think about how the knowledge can be threaded through the action in the game. (JE)

In the student interviews, being able to shoot without a correct answer emerged in the data (n=6) as the most salient category that contributed to the students' situational interest.

Consider the following student excerpts that are representative of the findings in the data:

Matt: The basketball one, because I am not very good at basketball but I got to shoot. (MIS)

Cathy: Probably the basketball one. Even if we got the question right or wrong, we still got to shoot. (MIS)

Here, both Matt and Cathy view the game as capturing their interest because they are able to shoot without having the right answer. Ordinarily in games in classrooms, the students would only be allowed to make a shot if a correct answer was provided. In the design of this game, the ability to shoot the basket was not used as a reward but rather a fun opportunity. This may provide evidence that such surprises embedded in learning sequences contributes to the students' situational interest.

The data also pointed to *Novelty or being new-fashioned* (n=3), *liking sports* (n=2) and *having all of the students involved* (n=1) as the situational factors that contributed to the students' situational interest in the history basketball game. The following student excerpts are representative of the students' claims.

Bill: New fashioned because we have done stuff in the classroom that we haven't done in the classroom before, like Tic Tac Toe and basketball. (MIS)

Nora: I don't really like to play basketball, but it was more fun in class, because we got to play a game to make a review rather than doing a worksheet and stuff. (MIS)

Ryan: I like sports and the teacher had made a sport out of learning. (MIS)

Juan: The basketball one was good because I like sports and it kept my attention more because we were all involved. (MIS)

Mary and I had conducted a consensogram at the end of the activity. The activity caught and held the students' interest (n=18), and the students perceived history basketball as an activity of high situational interest (n=18). The dimension of instant enjoyment was experienced by a majority of the students (n=18). Consider the following table that summarizes the results of the consensogram (see Table5.8):

Table 5.8: Consensogram of History Basketball Review Game

Question	Today's lesson "held" my interest	I was interested in today's learning experience.	I enjoyed today's lesson
Strongly Agree	11	14	16
Agree	7	4	2
Undecided	0	0	0
Disagree	1	1	1
Strongly Disagree	1	1	1

When we reviewed the video tape together, Mary stated that she does value using a *game* to enhance situational interest. Consider the following Think Aloud Session:

Me: How did you interpret the lesson using Berlyne's collative variables to design the basketball activity?

Mary: I like this one. I don't think it engaged the kids as much as the assembly line, but I can see most of the kids are having fun and are really engaged in the review. They're looking through their notes and even trying to score the free throw point.

Me: Let's take a look and tell me what you think is going on here. What sense do you make while watching the video? Do you see confirming or disconfirming evidence that the students are demonstrating situational interest?

Mary: Yes, I do. The consensogram showed the kids liked it. Look, the students are looking up the answers and helping each other out—I like that they are cheering each other on. I am getting a lot more participation here than a normal review when I just go around the room. I can't say that the basketball part helps the review, but it is holding their interest during the review.”

Me: Do you feel that using *novelty* and *surprise* to design the activities was engaging more students in the activity?

Mary: I am noticing more and more that when I have the classroom set up when they come in that it gets their interest right away. They all want to know what is going on. They also weren't expecting a game to review for the test. They liked that they were able to get out of their seats and play a game while they reviewed. And they liked that they could still shoot if they didn't get the answer. I'd do that again. (TALS, 4/11/07)

Mary liked using the situational factor of a *game* as a means to review for the test. Mary observes that “...most of the kids are having fun.” Mary’s observation of the students experiencing the positive interactive experience of fun in the activity supports the *instant enjoyment* dimension proffered by Chen Darst, and Pangrazi’s (1999). Mary describes the students as being “really engaged.” Mary sees engagement as having most of the “looking through their notes” and “trying to score the free throw point.” Mary has made related engagement to situational interest in previous activities. This may be suggesting that *engagement* is a dimension of situational interest construct. Mary also notes that this activity did not engage the students as much as the assembly line activity.

In Mary’s next excerpt, Mary cites the number of students in the consensogram that liked the activity as confirming evidence of situational interest. She also points out that the video tape is showing the students “looking up the answers” and “helping each other out.” Further, she likes that the students are cheering each other on. These are all positive interactive experiences that Mary associates as evidence of situational interest. She also found the history basketball

game resulted in a lot more participation than her normal review, where she goes around the room and asks individual students questions. Although Mary admits that she can't say that the basketball part contributes to the review, she sees that it is holding the students interest.

Characteristics of belongingness were again related by Mary to situational interest when Mary points to the students "helping each other out," and "cheering each other on." Mary also consistently refers to more participation when she observes the class to be interested. All of these variables are emerging as powerful motivators of situational interest.

In the third excerpt, Mary noticed that when she used *novelty* in the arrangement of her classroom that it caught the students' situational interest immediately. According to Mary, having the classroom set up for an activity caused the students to be immediately curious about the learning experience Mary also states that the student weren't expecting to do a game as a review for a test. To create discrepancy between the information embedded in a learner's expectations and what the learner perceives is the collative variable of *surprise*. Mary relates the students "liking" to *movement* in a lesson when she says that the students "liked that they were getting out of their seats." She further attributes the students' "liking" to being able to shoot even if they didn't have the correct answer. This may indicate that using *surprise* and *novelty* in designing activities influences situational interest.

Mary finds that adding *surprise* and *novelty in the environment* contributed to the students' situational interest. The situational factor that she observes as most meaningful in contributing to situational interest is *movement* and the individual factor is *belongingness*. The dimensions of situational interest that she observes are *instant enjoyment*, *engagement* and *more participation than normal*.

As I continued watching the video with Mary, I thought back to a different season in this classroom, when the students' heads just moved from side to side as they took notes for most of the hour. Now, they were shooting baskets while they were talking about history. The stages of growth in this spring were not escaping our attention.

5.3.2 Novelty and Surprise to Teach Prohibition: Value Road

On Friday, Mary was going to design a learning sequence on her own. The influence of Mary's understanding of what engaged student situational interest in the Assembly line activity is evident in the following Planning Conversation (04/11/07):

Me: Have you thought about an activity for Friday? (PC)

Mary: I kept thinking about how the students liked it in the assembly line activity that everyone was involved. I thought I'd move all the desks out of the way and have the kids make the choice of going one way or the other on a lot of these political issues. Like this side of the room is pro and that side is against and the middle is undecided. I would have them move to the spot in the room that showed their feelings on that issue. I thought I'd start out with something simple, like chocolate ice cream or vanilla ice cream, and mix it in with some of the things that I am doing like basketball or baseball. Then, I would go do you think the Government should control the speed limit? Yes....No... then have them go to the right section. (PC)

(PC, 04/11/07)

In designing her lesson, Mary reflected back on the fact that the students liked that *everyone was involved*. This may indicate that the dimension of *instant enjoyment* is strongly influenced by *having everyone involved* in an activity or *belongingness*.

Me: Why would you start out with chocolate or vanilla? (PC)

Mary: Preferences—start them out with what they prefer. I want them to understand the game. (PC)

Mary wanted to *model* to the students how the game would be played by using *relevant* preferences to engage situational interest in the activity.

Mary: I'll have them put a sign up or something, like "YES or NO" on each side of the room or "The government should be involved," or "The government should NOT be involved," and have them walk back and forth. If they are undecided, they can be in the middle. That is going to force them to have to be someplace. A lot of times in class, I'll try to have them vote on something and a lot of the kids don't vote. They just sit there until we move on. This way they are forced to be involved. I see from what they're doing that it is important to them to have everyone involved. (PC)

In this excerpt, Mary observes from prior activities that it is important to the students to have everyone involved. Mary noted that often in her history class the students don't participate or "...just sit there until we move on." Because Mary observed how *having all of the students involved* in an activity contributed to situational interest, she designed a lesson that forces each student to have to locate to the spot in the room that represents his/her political belief. This may indicate that Mary perceives that allowing students to "just sit there" does not contribute to *situational interest* in the content of a lesson.

Mary continued to explain the logistics of the activity.

Mary: And the end, the last one is going to be that I'll have them all sit down where they are at, and I'll bring up a new law about prohibiting soft drinks at the high school. That will be my lead into prohibition. I'll prohibit all soft drinks, anything but water at ICHS, and I'll have them choose "YES" or "NO", moving in either direction. Some will be okay. Some won't care, and they'll ride the fence. And some who love the mountain dew, they'll oppose it. Then, we'll talk about that they can bring a lot of things into it—the health issues or the cost. I think they will have a good conversation about that. Then, I'll bring it back to the idea that there is one group of people that are making decisions for everyone. We are just not making these decisions for our 30 people. We are making the decisions for 600 or so in the high school, and do we have the authority to do that.

(PC, 4/11/07)

Mary was including everyone into her game to discover if it would incite *situational interest* in the cognition of the period during Prohibition.

Me: Let's see if we can integrate more of Berlyne's variables.

I wanted to encourage Mary to incorporate more lateral thinking and synectics into the learning sequence.

Mary: Isn't this novel? Do we need to have the unknown? I am not coming at it probably from a right way. I am just trying to think of ways to get them out of their seat, doing something somewhat organized, but out of their seat first. I want to do something that will make them all feel comfortable.
(PC, 4/11/07)

Mary was associating the collative variables with the “unknown.” She does not feel that using the variables to disturb students’ thinking makes the students feel comfortable. Rather than using the collative variables to guide the activity, Mary guided the design of her lesson by the situational factors of *social interaction, meaningful choices, games, modeling, movement*, and the individual factors of *relevance* and *belongingness*. This may suggest that Mary was more at ease using the *situational* and *individual* factors to create situational interest than she was using the collative variables.

Mary also felt *having everyone involved*, and the *novelty* of the movement and the environment were sufficient factors in the design of her lesson to create situational interest. Mary was resisting having to create higher level perturbations because she believes that such disturbances do not allow students to feel comfortable. The risks that she is willing to take in lesson design were based on the *situational* and *individual* factors that she was observing from the data were influencing situational interest. Pedagogically, Mary is more at ease designing lessons to engage situational interest from that which is known. I wanted to investigate with Mary that which was not known in regards to situational interest. Such conflicting pedagogical dispositions were not allowing me to mentor Mary in higher level perturbations. Mary believed that higher level perturbations were beyond the zone of proximal development of the many special needs students in the class. I believed we could create higher level perturbations that

could be adapted to the students' zone of proximal development. Despite not having any evidence that there is a relationship between higher level perturbations and situational interest, I wanted to challenge Mary's thinking. Consider the following excerpt:

Me: That is a wonderful consistent theme with you. You are always going with it. You are always sensitive to the capability of every student. That's good, but what I don't understand is why you think students need to always feel comfortable in learning. Learning hurts. Who learns to ride a bike without skinned knees and bruises? (PC, 4/11/07)

I wanted Mary to see that there is merit in thinking that hurts. Mary was not willing to design lessons from factors that will not make the students feel uncomfortable. My pedagogical disposition is to disturb with cognitive conflict. I did not know how to move Mary's resistance to including cognitive conflict in creating her lessons. Even more, I wasn't sure if I didn't understand the wisdom that was driving such a pedagogical approach to lesson design. Throughout the study, Mary has approached lesson design with a caution to cognitive conflict. She has an unrelenting sensitivity to students' comfort zones. As a researcher, I wanted to see what happens to situational interest when you have cognitive wrestling matches. I wanted her to disturb the students' comfort zone in this lesson. Theoretically, I agree with Piaget that knowledge is constructed when our thinking is disturbed and we have restore equilibrium to our directed thinking. It is only then that the students' thinking is moved to a different place. Whether the students' thinking is correct or not correct, it is the sole purpose of learning to facilitate venues where the students' thinking is moved to a different place. Like physical workouts cause pain to achieve wellness, so it goes with mental workouts. Theoretically, Mary does not agree. She resists lesson design that causes the children to hurt in their thinking. Mary wanted me to see her side. Consider the following excerpt:

Mary: Do you think the kids liked the Model T activity so much because it was easy—because it wasn't really thought provoking. (PC, 4/11/07)

Mary states the assembly line activity did not require much thought; yet, she claims that it incited student situational interest. Mary suggests that “easiness” may be a situational factor that contributed to the *situational interest* in the Model T activity. In the interviews with the students, only two students suggested “easiness” as a factor that influenced the level of student situational interest. The merit of her observation, however, should not be underscored. *Easiness* of a learning experience may be related to high interest. Mary pushed me again for my perceptions.

Mary: Do you think the easiness of it came into at all? There wasn't much brainy mental work. (PC)

Mary wanted to know if I was seeing “easiness” as a factor in situational interest. Mary wanted me to consider that the *easiness* of an activity may be a legitimate situational factor of situational interest. I failed as a researcher to accept her supposition with objectivity. Consider the following response to her inquiry.

Me: Oh, I would never go to that level, where the activity is so easy. I think it was a good thing where they got to feel what the actual assembly line was. They were immersed. That was a good thing. We always have to move to higher level thinking here. We always have to be cognizant, where are we going with the thinking. Is this going to be an application? We always have to push them into drawing inferences. Do you get what I am saying-- it isn't just a gap. What are we doing that causes the kids to think from the clues, and it leads to higher level thinking, and it makes them value. Always ask when you are designing the lesson ‘What am doing with affect?’ That's the missing piece. When kids have to value, it goes into long term memory. Make them feel an emotion. Then, they will understand Prohibition better. As teachers, we have to look at the affect, because affect leads to greater cognition. If the kids have to feel, we know that it goes here better (Points to head). Yeah! I like what you are doing. This is good. You came up with a great idea! Let's call it “Value Road.”
(PC, 4/11/07)

I minimized Mary's observation by saying that “I would never go to that level.” I was failing as a researcher to listen to why Mary felt the *easiness* of an activity contributed to situational interest. Instead, I dismissed her observation and tried to override it with the idea that

the students were able to be *immersed* in the activity. I continued to push Mary into a pedagogical view that moves students to higher level thinking, to making application, or to drawing inferences. I liked that Mary was having the students *value* as they moved to the side of the room that best represented their political stance, and that she was using *affect* or *emotion* to teach the lesson about Prohibition. In the above excerpt, I had tried to point out to her the connection between affect and cognition. Despite trying to encourage Mary to emphasize more affect, I really liked her lesson.

The students entered the classroom looking for clues as to what the days' lesson would entail. They no longer expected to come into class and just take notes for the entire hour. After they had settled in their seats, Mary announced "Okay. Carefully, move your desks forward to the front of the room. Notice the sign that says "For" on the right hand side of the back of the room. Now, look at the "Against" on the left hand side. Okay. Now, look at the middle. It says "Undecided." In this activity, you're going to have to make some decisions. You are going to move to the side of the room that shows what you believe. Later, I will ask you why you are taking that stand. To get you started, I will ask you some personal preferences. Okay! Chocolate ice cream (Mary points to the left side of the room) or Vanilla ice cream (Mary points to the right side of the room). If you don't like ice cream go to the middle (VT)." Mary said.

The students scrambled to each side of the classroom. Once they stood among their peers, they studied their classmates to observe their choices. They were smiling and anxious to hear the next choice.

"Baseball (Mary points to the left side of the room) or basketball (Mary points to the right side of the room) (VT)."

Talking on the phone (Mary points to the left side of the room) or watching American Idol (Mary points to the right side of the room) (VT).”

“Italian food (Mary points to the left side of the room) or Chinese food (Mary points to the right side of the room) (VT).”

“Getting up early (Mary points to the left side of the room) or getting up late (Mary points to the right side of the room) (VT).”

“Playing video games (Mary points to the left side of the room) or being on the Internet (Mary points to the right side of the room) (VT).”

With each choice the students quickly moved from side to side. The students liked having this information about each other. They were busy studying each other’s choices. Each student was carefully watching who was standing with him or her. It revealed that they were alike in that respect.

“I asked you to read chapter 13. One of the themes was Prohibition—the banning of alcohol. Now, in order to do this, I want you to take time to think about things. I will give you an issue and you decide if the government should be involved in people’s lives. For instance, do you feel there should be a mandatory seat belt law? “Yes” (Mary points to the left side of the room) or “No” (Mary points to the right side of the room) (VT),” Mary directed.

The students move to the side of the room that represented their beliefs.

“Ryan, why did you say ‘No’?” Mary asked.

“Seatbelts can also kill you. It should be our choice.” Ryan said.

Mary continued the lesson in the same fashion throughout the hour. She asked the students about motorcycle helmet laws, speed limits, using cell phones while driving, curfews, age to drive, and age to drop-out of school. After the students moved to the appropriate area in

the room that represented their perspectives, she would pick out certain students and ask them to defend their answer. Once this was done, she set the stage for the students understanding of Prohibition.

“I am proposing a new law. From now on, every single high school student will only be able to drink water in school. No other beverages will be allowed. Give me some reasons why taking out the pop machines in high schools would be a good thing?” (VT) Mary asked. She was using this law to lead into teaching prohibition.

“Sugar (VT),” one student yelled out.

“Tooth decay (VT),” said another.

“Calories (VT)!” said a third student.

“Now, you’re getting the idea. Now, if your first name begins with A through J, go to that side. If your name begins with R through Z, go to that side. This side will come up with three reasons why pop machines should be prohibited from high schools (Mary points to the left side of the room). That side will come up with three reasons why we should keep the pop machines (Mary points to the right side of the room) (VT).” Mary instructed.

“But Mrs. B, what if we don’t think like that (VT)?” A student asked.

From some of the groans, it was apparent that students did not like being asked to defend a belief that they did not hold. This may support that providing students with *meaningful choices* is a significant situational factor.

“This is to help you understand what was going on during Prohibition (VT)” Mary said.

Mary ended the class by discussing the reasons that each group came up with to defend their group’s position.

As I watched the video at the end of the day, I saw that Mary's activity engaged the students' *situational interest*, and her idea was *novel*. It had *surprised* the students how the activity allowed every student to observe their peers perceptions. As one student stated in the interview "I thought it was interesting because if they (the students) were just asked it, and they didn't have to get up and move, I wouldn't know what everyone's opinion was (MIS)." When Mary and I were planning and she stated that it would be *novel* because everyone's opinion would be heard instead of just a few, I didn't understand the power of her insight. This activity caught and held the students' *situational interest*. After viewing the video, I wrote in my journal:

Running from one side of the room to the other, the students stop and fit together like puzzle pieces to showcase the perspective that they hold together. Their common thinking is their glue. It is a quick snapshot, loaded with information about each other that yesterday they did not understand about their peers. This activity has brought the students closer. It has required everyone to reveal their perceptions. I hear 'I didn't know you liked video games (VT)' or the 'I like Chinese food, too (VT)' comments in the background of the video, as if it matters. The truth is that it does matter. No one is off task in this activity. Each student is studying his/her peers intently to discover their thinking.

It's not like in the first videos when Mary would ask the student what he/she thought. Earlier, when Mary was asking for feedback from the notes, few students would attend to his/her answer. Here, everyone is attending to each other's perceptions. Again, like the assembly line, Mary has everyone involved in a novel way. Is the fact that everyone is involved a novelty to what children experience in public education? In this old neighborhood, the norm is to call on students who the teachers perceive will have the highest probability of providing the correct answer. The children who do not understand are overshadowed and left behind by a teacher who rewards the right answer with a "Good job!" and then moves on to the next concept. Is that because of the pacing required in having to meet all of the state standards and benchmarks? Is it the movement and the fear of a loss of classroom control preventing this experience in lesson design? Is it because that's how the teachers learned? Is it because teachers place little value on designing lessons that would engage interest? Creating novel lessons where everyone is involved is a valuable consideration for lesson design that incites situational interest. Mary is taking my hand in this lesson. (JE)

In my journal entry, I saw *novelty*. It was novelty in movement and it was *novel* in how Mary had used that movement to utilize the situational factor of having *every student involved*. It was also novel in that movement is used to represent students' thinking. I see that when children experience situational interest that they *feel closer* to each other. I note that the dimensions of *attention* and *engagement* are apparent when students experience situational interest. *Engagement* is supported by the fact that no student is off task. *Attention* is demonstrated in that all of the students are attending to each other's positioning in the class and listening to each other's answers. This also supports Bergin's claim (1999) that *discussion* is a situational factor. It was a medium level perturbation that was easy; however, it caught and held the students' situational interest.

In the student interviews, this activity emerged as an activity of high interest. The majority of the students who were interviewed after the activity had occurred cited this as an activity of high interest (n= 6), and they stated that it caught and held their interest. Four aspects emerged as why the students perceived the activity as interesting.

First was the novelty of the movement. The following student excerpt best summarizes student interest in using movement in a novel way:

Phil: Oh, yeah! That was more interesting because I was up and around, and it showed how many people had that opinion about the question. (MIS)

Phil finds the activity interesting because he was up and around, and he was able to visually understand how many people held the same opinion on an issue. Using movement to express student thinking was unexpected to the students. It was a novel way in a lesson to share thinking. What is emerging is that if a teacher adds Berlyne's collative variables to high interest situational and individual factors (Bergin, 1999) that student situational interest is stronger than lessons that do not consider these variables in the design of a lesson.

A *sense of agreement in the discussion* in the activity and *differed feelings* was also salient in the students' responses as being significant influences in student situational interest.

The following excerpts suggest such significance:

Me: What is it about that activity that engaged your interest? (MIS)

Chad: I see that I am not alone in thinking that way. (MIS)

Andrew: I like to see what others are thinking, not just what I'm thinking and whether they agree with me or disagree with me. (MIS)

Bill: Kids like to be up and associating with other kids their age and getting views on topics and comparing their answers. (MIS)

Sam: It showed your opinion and other's views. It was interesting to see how people felt about issues. It helped to hear why someone would feel that way about something and different situations. (MIS)

Chad wants to know that he is *not alone* in a particular way of thinking. For both Chad and Andrew, *a sense of agreement in the discussion* in the activity created situational interest. To Bill, *getting other's views on topics and comparing those to others* elicits situational interest. For Sam, the activity *showed how other people's opinions are different*. For both Bill and Sam, *differed feelings* expressed in the activity influenced situational interest.

In the students' sense-making of the world around them, they highly value the opportunity to discover that their perceptions are *shared in a sense of agreement* or *were different*. Agreement and differed feelings contributed to belongingness in this activity. This may be supported when Chad says, "I see I am not alone in thinking that way." Again, this may support Bergin's claim that the individual factor of *belongingness* is significant in engaging situational interest in lesson design. These student excerpts place an important value on sharing perceptions, seeing they are "not alone" in their thinking, and seeing "how people felt about issues." The excerpts are supporting the claim that *affect, discussion, emotion, and belongingness*

may play a significant role as situational factors that incite student situational interest in lesson design.

Having the *entire class involved* in the activity in the activity was cited again as a characteristic of the learning activity (n=3) that influenced the students' situational interest.

Consider the following excerpt:

Ryan: I liked the one we did today. You got to see everybody's opinion—not just a couple. (MIS)

Lynn: I think it bothers me when no one shares, when they should (be sharing). (MIS)

Ryan likes activities where he is able to see everyone's opinion and “not just a couple” of students. This may suggest that when students only hear the opinions of only a couple of students who frequently raise their hands to contribute that it may detract from the students' situational interest. Lynn is bothered when no one shares their opinions about their feelings in a learning experience. She believes all students “should” be sharing in a lesson. Designing activities where the entire class has a role in the activity is emerging as a significant situational factor in inciting situational interest in an activity.

As we were watching the video together, I interviewed Mary as to her perceptions of the lesson. Consider the following excerpt from the interview.

Me: What main issues or themes strike you as you are watching this learning sequence?

Mary: I would say the movement. With these kids, the most important piece is the movement—getting them up and around the room in an organized fashion. I don't think they get a lot of that during the day. I think they are enjoying what we are doing.

(TALS, 04/16/07)

Mary believed the most “important piece” is the *movement*. She believes it is novel because she doesn’t think students are getting that opportunity to move in other classes. She thinks that the students are *enjoying* the activity. This supports the dimension of Instant Enjoyment (Chen Darst, and Pangrazi, 1999). Mary also suggests that getting kids “up and around the room” must be done in an “organized fashion.” This may indicate that Mary believes that novel movement that is not organized may detract from situational interest.

In the next excerpt, Mary points to what she perceives as the confirming evidence of situational interest.

Me: Do you see confirming or disconfirming evidence of situational interest?

Mary: Yes. They were very physically engaged, and they had to do their part. It wasn’t too difficult. Everyone could do it. It wasn’t all the bilingual students can’t be involved or the spec. ed kids can’t be a part. Everyone did it. You can see that is holding their interest.

(TALS, 04/16/07)

Mary views evidence of situational interest is the students were “physically engaged.” She sees that the contributing situational factors to “holding their interest” are “everyone could do it” and “everyone did do it.” She continues to assert that the level of *difficulty* influences situational interest. Mary sees when activities or learning sequences are perceived as “too difficult” by the special education students and bilingual students that situational interest would not be held.

Mary next relates the characteristics that she sees as being salient in the activity. This is illustrated in the following excerpt:

Me: Do you see anything as being salient?

Mary: I think the movement is big, and that everyone is involved. I’ll do more of that next year. (TALS, 04/16/07)

Mary thinks *movement* and *having everyone involved* in the lesson are situational factors that significantly contributed to situational interest. This observation convinced her to integrate these situational factors into her lessons more frequently in the following year. Mary's pedagogical disposition was becoming more open to the cognitive value of catching and holding situational interest.

In spring, when things begin to blossom and a warm light is cast upon once frozen ground, you are able to see clearly what must be done to prepare for the following year.

5.4 Planning Conversation for Weeks Four and Five

The situational factors identified in the Ticket-Out-The-Door-Survey, the situational and individual factors identified in the work of Bergin (1999) and Schraw, Flowerday, and Lehman (2001), and the factors we saw emerging in the study influenced where Mary and I would go next with our learning sequence. We would continue to add Berlyne's collative variables to the Bergin's (1999) situational and individual factors to continue to investigate the theory that was being grounded in the data. Movies had been mentioned by the students in the Out the Door Survey. Mary and I felt integrating the collative variables and situational factors with a movie about Al Capone may be worth exploring. Consider the following Planning Conversation (4/13/07). The beginning of this session was transcribed in field notes until the tape recorder was working.

Me: What were you looking at for next week? (PC)

Mary: I would like to do something on Al Capone. (PC)

Me: All right. What can we do for Al Capone? (PC)

Mary: I have this good Capone movie that gives great information of him as a gangster. Mr. Dean (pseudonym) gave it to me. It's from the Biography Channel and he says the kids really like it. I was thinking we could do that Monday and Tuesday. (PC)

Me: Great! Movie was a variable the kids mentioned in the survey. What would be the collative variable (PC)?” I asked.

Mary: It will *surprise* them. It shows the other side of Capone—how he formed a soup kitchen that fed 3,000 people a day. The kids will also like the *novelty* of how the is always flirting with the women. That’s how he got the scar across his face. He makes a remark about a woman’s behind and her brother sliced his face. I want to do something with this, though. Help me think of something that will make them remember the stuff in the movie (PC). (PC, 4/13/07).

Mary was using the variable of *surprise* and *novelty*. She felt the students would be surprised that, despite being a gangster, Capone had a sensitive side. She also thought the novelty of how he came to have the scar on his face would engage situational interest. Mary and I would be investigating if the *novel* and *surprising* parts of the movie would catch and hold the students’ situational interest. Mary wanted me to help come up with an activity that would help the students with better recall of the content of the movie. This is illustrated in the following planning conversation:

Me: Let’s do something that is an anticipatory set to lead into the movie or a journal entry that they have to talk about. Okay! I’ve got it. What about this... three kids in a group. They each have a car and they have a road race to Capone’s hideout. They have to answer questions. Every question is a mile. You have ten questions to get to Capone’s house before the movie. (PC)

Mary: How about this, I’ll have the cars up on the board, and we’ll start out with a few questions from the chapter and the rest of the questions will be from the movie to end the race! (PC)

Me: You’re a genius! How about if we have a car race to Capone’s hideout? We’ll break the kids into groups and each group will have a car that will move along the back bulletin board a car length at a time. You’ll surprise them with unexpected questions about the movie and the chapter. The group that gets the question right gets to move a car length. The first car to get to the hideout wins. Do it over the next week or so to reinforce the stuff from the movie and chapter. (PC)

Mary: “Okay! I like that. We’ll give the winner of the game a homework pass to motivate them. We’ll do that Monday and Tuesday. What was the idea that you were talking about for Chapter 13? (PC) (PC, 4/13/07).

Mary and I were combining the situational factors of a *movie* with *unexpected information about Capone*, a *game with unexpected questions* to advance the cars to Capone’s hideout, *sufficient background information* provided by the movie to supplement the text, and *social interaction* by having each row of students act as a team to answer the questions, with the collative variables of *surprise* and *novelty* to investigate the effects on situational interest. The winner also would be provided with a homework pass to as an additional potential motivator. I continued on with my idea for Chapter 13.

For four weeks, it had been “top-down” lesson design. I wanted to know what would happen if the students would use Berlyne’s collative variables to construct the knowledge for Chapter 13 in a jigsaw. I had been using the data that was emerging in the qualitative study to design the sample learning sequences for the quantitative study. From all of the activities that had emerged as being “interesting activities”, I had selected a work station approach. I wanted also to use a constructivist standpoint in the qualitative study to observe what would happen. Consider the following planning session for weeks four and five.

Me: I was thinking about this. What do you think—I am going to go with whatever you think, because you are thinking really good here. What if we make work stations and divide the kids out. We make the kids with higher level bring out the kids with the lower level. We can make four chairs at each table. Maybe you could think of another group to add from the chapter. We could do one with strictly prohibition (Pointing to a group of chairs in the classroom and in this group at that table they are going to be like customs and values of the times. This is where the roaring 20’s type attitude. They like that a lot. Okay! How about this (showing Mary the themes in the book). So, here’s education and popular culture. We have the Harlem Renaissance. We have literature. We could have them sign up their first choice, their second choice, and so on. What we are thinking is they have to create the sections of the scavenger hunt using just materials from the text or they can add something from new material in the lab. In

the game, the students will be going station to station in a scavenger hunt in teams. Like a jigsaw, they will work together to move around to complete the hunt. It will be up to the kids to possibly create the questions from the material. The jigsaw will be how the students learn the content of the chapter. If you want them to use the chapter or if you'd like to take them to the library for additional information—they'll earn points from each question, harder question, etc. I don't know how you want to do it. (4/13/07).

I was throwing out ideas for a constructivist lesson. I thought a jigsaw would encompass many of the features of the high interest activities that had earlier been identified by the students in previous lessons. The situational variable of *social interaction* would be used by having the students work in groups. I wanted to group the students according to ability level. *Movement* would be used by having the students move from station to station. *Meaningful choices* would be integrated by having the students be able to select the theme in the chapter that interested him/her the most. *Sufficient background information* would be provided by each group of students and jigsawed to the students in the other groups. The idea was rough. Whatever we would decide for the work stations, I was asking Mary to mentor the students in integrating the collative variables into their information. Consider the following explanation to Mary:

Me: They should be putting out information so the kids have to go find it out of what they create in the displays that could be part of a homework assignment too. We can look at this as a Tuesday or Wednesday activity. If they want to work in the lab on their displays for their area, they need to divide out who is responsible for each part. The kids will move around to each of these work stations. I would like to add some of this synectics stuff (showing Mary the synectic section in the book), like maybe in their display they have to take some aspect of the information and distort it and the kids have to catch or discover what they distorted. Have them create conceptual conflict. I think we should make them use the variables with the information. We'll see if we add these kinds of elements if it will also make it interesting to the kids. Maybe they have to take one aspect of the thing and they have to create an incomplete analogy and the kids have to complete the analogy. We could have different criteria that they have to show. I like the synectics stuff (showing the book). I am not sure how, but we can think about it over the weekend. You will have to explain it to them and guide them through it. Remember a lot of notes are going to be covered in the game or in the jigsaw. Make it their responsibility to know

it. The accountability should be done while they are moving around. They should be constructing knowledge at each station. This may take two or three days for them to move to all of the stations. Set a limit. (PC, 4/13/07).

I was asking Mary to have the students use synectics to integrate the *collative variables* at the work stations. I wanted her to explain to them how this could be done and guide the students through it. I wanted to observe what would happen to situational interest when students would be responsible for creating conceptual conflict. My vision was that at each work station the students were creating displays, guided by *collative variables*, where their peers would have to construct knowledge about that section of the chapter.

Mary and I decided to think on it over the weekend. Over the weekend, I prepared a jigsaw to share with Mary. On Monday morning, I handed Mary a copy of the plan of the learning sequence and explained it to her. I wanted her feedback. The following is the lesson plan that I had prepared to discuss with Mary:

Jigsaw for Chapter 13

Qualitative is showing: *movement; personal meaning/relevance; having everyone involved; group work; discussion; novelty; completion; complexity; surprisingness; hearing what everyone has to say; active learning; games; hands-on activities; novel information; movies. Divide hour into meaningful units; sufficient background information; discussion; checking perceptions and for understanding.*

Instructional set

Questions for the Mafia Car Race to Capone's House will be asked at random times while the students are preparing the jigsaw.

Each group of students will be responsible to create work stations around the room and supply the visiting students with an answer sheet. Each group will have a display to teach that aspect of the chapter.

Every display must have the following chairs to be completed by every student:

Students are given so much time at each station.

One chair is “the story” of that section of the chapter- Students have to complete questions about the section. This can be in the form of a game or any novel approach. It is the informational chair of the section.

One chair is a comic and quote chair. Leave off the words in the comic and some of the words of the quote. Students must fill in and justify.

One chair is the creativity chair. Here, students must create a cartoon, a poem, make fun of the subject, create 5 analogies, explain how the crash would occur in the animal kingdom, create a myth with a super hero. Students get to choose one.

One chair is a “then and now” chair. Students establish personal meaning here—how does this relate to me?

One chair is the discussion starter chair. Every student will write a question about this part of the chapter that he/she wants to discuss in class.

Groups for Displays

Prohibition

Cultural conflicts and values

The Twenties Woman and Youth in the Roaring Twenties

Education and Popular Culture

The Harlem Renaissance and Literature in the Jazz Age

Students with the best score earn a debit card to be applied to any assignment that will occur in the rest of the year.

I went over the lesson with Mary. Consider the following planning conversation:

Me: Let me run this by you. I was thinking we would divide out the classroom into five work stations that would represent the five themes in Chapter 13: “Prohibition”, “Cultural Conflicts and Values,” “The 20s Woman and Youth in the Roaring 20s,” “Education and Popular Culture” and the “Harlem Renaissance and Literature in the Jazz Age (McDougall Littell, 2003). We’ll assign the students into groups of five or six. Each group will be responsible to design a work station about that theme using the collative variables to learn the information about that theme. There will be five chairs per work station: the information of the chapter chair, the comic and quote chair, the creativity chair, the “Then and Now” chair, and the discussion chair. The student who does the information chair is responsible for teaching the background information for the theme in a novel way. The student who has the comic and quote chair will find comics and quotes for that theme and leave gaps that must fill in or create conceptual conflict with comic quotes. The student who selects the creativity chair will create an unusual activity to learn about that theme, like synecthics. The “Then and Now” chair will have to deliver how the theme back then is relevant to them now in a novel way. Finally, the discussion chair will create dilemmas to discuss or discussion questions

that will make the students think about the theme through a discussion, when all of the other chairs have been completed at all of the workstations. You could use those questions for review. Each student will select a chair to be responsible for each display. Using surprise, ambiguity, novelty, or conceptual conflict their group will create a work station that will teach that theme to their fellow students. They'll set their work station displays up on bright colored poster board. They can use their books and you can take them to the computer lab for a couple of days to gather additional information from the internet. You will facilitate the learning and move from group to group to help each group by questioning their perceptions and helping each student integrate the variables into his chair at the work station. I want to see what happens to the situational interest when it is their responsibility to teach each other. What do you think? (PC)

Mary: I like it but I don't want it to be competitive. (PC, 4/16/07)

Mary liked the lesson; however she did not want it to be competitive. We did add a homework pass to the Capone Car Race, but Mary did not want the work stations to be influenced by an extrinsic reward. We dropped the debit card idea, and Mary agreed that she would facilitate the jigsaw and mentor the students in integrating the collative variables. She also agreed to come up with a scavenger hunt on her own for the sixth week the study.

I thought about how Mary didn't want the work stations to be competitive. That was wise. I wrote in my journal.

Mary is right. Competition divides the students. It catches situational interest, but the interest is more fleeting. It is a Machiavellian mentality that, in the end, builds walls among the students. This study is showing the power of belongingness in holding situational interest; yet, I revert back to classroom strategies that detract from situational interest. The old neighborhood lives deep within; I need to let the data guide me. (JE)

In this entry, I see, like Deci, Koestner, and Ryan (2001) suggest, that tangible rewards undermine intrinsic motivation; however, as an educator, it is a second nature to pull out everything to motivate students. I see that competition divides and belongingness bonds students, but I can't let go of offering the prize to get the students to engage. I also cannot dismiss the

observation that competition does catch interest but it does not have the holding power that accompanies a feeling of belonging.

In spring, sometime we are fooled into feeding the ground poisons to make what we are seeding grow, and so it goes with competition. Under such conditions it grows, but is it lasting?

Mary and I created the timeline for the activities. The following table is a timetable of the activities for week four (see Table 5.9).

Table 5.9: Timetable for Lessons in Week Four

Date	4/16/07	4/17/07	4/18/07	4/19/07	4/20/07
Activity	Make cars for the game. Show Capone movie.	Finish video. Explain the game. Explain the jigsaw.	Students go to computer lab for research	Students go to computer lab for research	Students go to computer lab for research
Collative Variable	Surprise Novelty	Surprise Novelty	The students will integrate Surprise Novelty Ambiguity Indistinctness Complexity into their work stations.	The students will integrate Surprise Novelty Ambiguity Indistinctness Complexity into their work stations.	The students will integrate Surprise Novelty Ambiguity Indistinctness Complexity Change into their work stations.

The following titles capture the essence of the activities in the second week of the study:

11. *Novelty, Surprise, and Vivid Detail* Creates Desire to Explore: Capone Movie

12. *Novelty and Surprise* in a Review Game: A Car Race to the Hideout

5.4.1 Novelty, Surprise and Vivid Detail Creates a Desire to Explore: Capone

Movie

Mary had an artistic student design the gangster car template. He also drew the hideout in the middle of the back bulletin board. Mary's student assistant had drawn the car on a number of

colored squares. Each square was then laminated.

Again, when the students arrived in classroom, the environment was *novel*. As the students filed through the door, most of them took note of the back bulletin board with comments like “What’s that? (VT).” Once the students were settled into their seats, Mary explained the activity

Folks! You are going to split up in teams. Each row will be a different team. Each team is going to be represented by a 1920’s car in the mafia. You will choose what car you want and cut it out. We are going to put cars up there (back bulletin board) and have a race. We are going to start out by trying to get to Al Capone’s hideaway. Okay. Now what we are going to do is everyday your teams are going to be answering questions based on the chapter and the movie you’re about to see. I want you take notes, but no resources may be used to answer the question. Every day, I’ll surprise you with a question. You can talk with each other to answer the question, but you can’t look back at your notes. You’ll move one car length for each correct answer. The car that wins the race will win a gift card toward assignments. You will be able to substitute the card for a homework assignment. Are there any questions? (VT)

The students in each row immediately bundled together into their groups, and cut out their car. Each group selected a different colored car to represent their group (VT).

As I viewed the video of the students watching the Capone movie, I wrote in my journal.

Consider the following entry:

As I watch the students attending behaviors, it is striking how the students’ momentary distracted behaviors are immediately redirected to the video when a novel or surprising event occurs. No matter what they appear to be distracted by, it appears that their minds immediately understand that there is novelty or surprise in the background and they quickly return their attention to the novelty or surprising event (Situational interest that accompanies surprising events supports Schank’s (1979) earlier work on interestingness). I see it when the Saint Valentine’s Day Massacre occurs or Capone’s arrest is on the video or when they show his soup kitchen. Every student in the room stopped any distracting behavior and they were entranced. Movies coming out of Hollywood are using Berlyne. They are threading novelty and surprise throughout the film to catch and hold the audience. Teachers must also understand the power of threading novelty and surprise throughout the learning sequence as well. It would be interesting to record the novel information that elicits the highest points of student attending

behaviors and test to see how well it is stored in long term memory. The real question is, like movies, can teachers create more meaningful cognition by using these collative variables to create wrestling matches with the information in their learning sequences. That will be another study. (JE)

In the video, I see the students attending to novel and surprising events. I believe that Berlyne's collative variables are being used to hold viewers attention in movies. I see value in teachers doing that as well. What I don't know is if higher level "wrestling matches" with knowledge would engage more situational interest or is it as Mary says that the "easiness" of an activity adds to situational interest.

In the student interviews, *novel* information about Capone created a desire for the students to want to learn more information about the topic (n=6). This also supports the dimension of Exploration Intent (Chen Darst, and Pangrazi, 1999). The following students' excerpts illustrate the desire for the students to want to further explore information about Capone:

Ryan: The Capone movie was good. I wanted to learn more about that. I thought the movie ended early. I wish we could do more on that. (MIS)

Tyler: Learning how things were back then and how Capone had gang wars. I kind of wanted to learn more about who was involved and how they ran it. It made me want to look stuff up and find out how it worked. I'd say the Capone activities made me curious the most. (MIS)

Ryan wanted to learn more about the content that was introduced in the Capone movie. He wishes the class could do more with Capone as subject matter. Ryan's desire to know more about Capone is also supported when he thought the "movie ended early." When a student indicates that subject matter ends early, it suggests that he wants more information about the subject matter. Tyler states that he wants to know more about who was involved in the gangs and how a gangster organization was run by Capone. His curiosity made him want to look stuff up to find out how it worked. The novel information in the movie may have compelled a desire in both

Ryan and Tyler to learn more about the content. Out of all of the activities, the Capone movie elicited more strongly than the others the Exploration Intention dimension. This may indicate that when the situational factor of *sufficient background information* (Schraw, Flowerday, and Lehman, 2001) is presented with *novel vivid details* (Schank, 1979) that the exploration intent dimension of situational interest is more likely to occur. Ryan may provide the most evidence for such supposition when he states that such novel detail about Capone impelled him to “want to look stuff up and find out how it worked.” Up to now, little has been stated in this research about how situational interest influences a student’s perception of time. When Ryan describes the movie as ending early, this may also indicate that when students experience situational interest that time with subject matter goes by quickly. I see this relationship in my own classroom. When students are experiencing situational interest with subject matter, their perception of time is that it is fleeting or that the hour went by too fast. This is an area of research that needs further investigation.

The novelty of the information in the Capone movie caught and held students’ interest. Out of twenty students, four students stated that the Capone movie “caught” and “held” their interest. This is illustrated in the following student excerpts.

Me: Are there any activities that caught and held your situational interest?

Chad: How Capone lived and got all the power and had the police look for them. I felt that was amazing how he could do that back then. (MIS)

Bill: Yeah! I thought he was more of a gangster but he was really out to help the people. (MIS)

Chad’s interest is caught and held because he found it amazing how Capone lived, how he had acquired so much power, and how he was pursued by the police. Bill’s situational interest is caught and held because the movie created wonderment about how Capone was able to yield

power in the days of the gangsters in America's history. This may suggest that situational interest is sustained by "amazing" or surprising events.

Two other students suggested that a movie is more interesting when it is a thorough treatment about one specific person or an aspect or an event rather than treating a number of events or people with a brief treatment in background information. This may support the supposition that that adding vivid novel detail to sufficient background information about one topic in subject matter may encourage more situational interest. As one student stated, "Like the Capone movie, it's fun to have stuff like that. I like the movies that are about one specific thing. When it (a movie) tells you a bunch of information, you kind of forget it. I don't like those kinds of movies (MIS)." The students were contrasting the Capone video to the video about the decade that they had seen the week before, where there is just a brief treatment about specific events throughout the decade. This student is suggesting when there is a "bunch of information" about many things the students don't like it as well as when there is sufficient information about one "specific thing." This may suggest that the dimension of Instant Enjoyment (Chen Darst, and Pangrazi, 1999) in situational interest is influenced by having *sufficient background information* (Schraw, Flowerday, and Lehman, 2001) about one person or event in learning sequence.

Mary also felt that the novelty in the video made the students "more interested" in the topic and encouraged the students to want to want to learn more. Consider the following Think Aloud Session:

Me: Do you see confirming or disconfirming evidence that the novelty of the video caught and held the students' situational interest?

Mary: Yes, I think the movie got them get more interested in the topic. Some of the kids—one of your questions on one of your consensograms said something like 'Would you like to learn more about this?' and some of the kids told me separately, afterwards that they did but that they did not want to put it down because it is history. (TALS, 4/18/07)

Mary believed the *novelty* in the video got the students more interested in Capone. She points out that some of the students came to her and admitted that they were not honest about answering the question on the consensogram (see consensogram in next section) related to their exploration intent. This may be that the students did not want their peers to see that they wanted to learn more about history. This may account for the high number of undecided (n=8) on the consensogram. This may also suggest that some students do not want to be honest about having situational interest in an event in history. The students may fear that their desire to know more about a historical event may be ridiculed by their peers. Mary's observations may suggest that when the situational factor of *sufficient background information* (Schraw, Flowerday, and Lehman, 2001) is presented with *novel vivid details* (Schank, 1979) that the *Exploration Intent* dimension of situational interest is more likely to occur.

As we watched the video, I wanted to know what Mary saw as emerging in the video text. Consider the following excerpt:

Me: Do you see anything as being salient?

Mary: The *novelty of the information* held their interest in the video. You can see they're paying attention. They liked finding out that Capone's womanizing caused the scar on his face and the kids didn't expect a gangster to sponsor a soup kitchen that fed 3,000 people a day. (TALS, 4/18/07)

Mary believes the *novelty of the information* is holding the students' attention. This supports (Chen Darst, and Pangrazi, 1999) dimension of Attention. Mary also points out that the students liked finding out how Capone received the scar on his face and how they didn't expect him to finance a soup kitchen. This supports the claim that people pay attention to interesting ideas (Schank, 1979; Hidi & Baird, 1986).

To reinforce the content in the movie, Mary and I created a car race to Capone's hideout.

5.4.2 Novelty and Surprise in a Review Game: A Car Race to the Hideout

Over a week in a half period, Mary would surprise the class with questions that reviewed the content from the movie. A correct answer by a team would allow the team to move the team's car in the game. Because Mary was conducting the race in two of her classes, it was soon made obvious that Mary had too many cars to advance them on her bulletin board. To solve the obstacle, Mary made a race track on paper, and when she surprised the teams with a question, the winning team would advance their car on paper. Mary promised a homework pass to the winning team. The students could use no resources to answer the question but could orally work as a team to offer the correct answer.

As I observed the car race, I took notes and then reflected in my journal:

The students are cheering each other on and reminding each other that the winning team will get a free homework pass. 'C'mon! We get the pass and stuff if we win (VT)' can be heard in the background of the video text. It was motivating the groups to work together to provide the correct answer. Their focused attention in their groups signals that interest is being held. Few off-task behaviors are being exhibited. Is this a paradox that the idea of a promise to get out of work catches students' interest and motivates them to do work? Is it the novelty of such a promise that holds their interest? If so, should research look at the role of novel incentives in eliciting and holding situational interest? I have not considered this before; however, economic systems do it all of the time. Take, for instance, offering AP credit for classes you won't have to take in college or working longer hours to get an extra day off. The greater question is, 'Does the very nature of a paradox hold a power to elicit situational interest?' A behaviorist may suggest that the event of the paradox is offering a needed reward that is motivating the action. This may be true, but does the very nature of a paradox cause attending behaviors? For instance, take the famous lie paradox "This sentence is a lie," does this immediately cause us to attend? This needs to be investigated in future studies. What I do see is the car race to Capone's hideout is holding the students' interest and the homework incentive are being cited with a high frequency. Again, however, this is competition, and the situational interest is not like it was in the assembly line activity. The interest is not being driven by a bond between the children or the novelty of the simulation. It is being driven by a prize. The video is missing a connection between all of the children. (JE)

Again, I see the students working for a prize. I question whether the paradox or novelty of the prize is causing more of the attending behaviors. I am seeing in the video the homework pass is motivating the students to engage in the race. In the movie, the novel information engaged a lasting situational interest in many of the students; however, now I see the prize motivating the action. The content is now secondary to the goal of winning the prize. Yet, the prize is inherently novel—work hard together to get out of work. Also, the situational factors of *social interaction* and *game* are added to the *novel* prize. If the prize was a pencil or a sticker, would the situational interest be as pronounced? In this activity, there was not the belongingness and intrinsic motivation that was made obvious in the assembly line activity (Deci, Koestner, and Ryan, 2001).

In the student interviews, when the students were asked if situational interest helped the students on their tests, four students cited the car race as helping them on the test. Consider the following excerpts that are representative of the students' responses.

Kyle: Yes! The last test we took on Al Capone, doing the activities helped me. The car thing helped me to understand, because if we just watched the movie, I probably wouldn't have understood it, and I wouldn't have been able to answer the questions. (MIS)

Bill: When we were watching Al Capone movie, that group questions thing, we knew them (the test questions) more. (MIS)

Kyle feels the car race helped him understand the material on the test. Bill sees the car race game as contributing to greater student recall on the test. Since much of the game questions focused on the novel information provided in the movie, this may support the claim that students are able to recall novel or surprising information with higher frequency (Hidi & Anderson, 1992; Hidi & Baird, 1983).

The next category that contributed to the perceived interest of the activity was that the students never knew when the car race would be conducted (n=4). One student summarizes well the role that the unexpected or *surprise* element of the questions played in represented four others when she said “I think it is cool, because you don’t know when she is going to move the cars when we answer questions (MIS).” This student suggests that she thinks it is “cool” when teachers design learning sequences that integrate surprise or the unexpected with a game.

The last category as to why it was perceived as an interesting activity was because of the homework pass (n=3). Consider the following excerpts.

Me: Would you say this activity “caught” and “held” your interest?

Chad: Definitely. It was something that I wanted to do because it is for a homework pass. (MIS)

Lynn: Yes. It seems like a lot of the kids are already working harder because they want to get that homework pass. (MIS)

Chad and Lynn both students indicate that the car race caught and held their situational interest due to the homework pass. For Chad, the homework pass motivates him to engage in the activity. Lynn suggests the students are “working harder” because they want the pass. This may suggest that situational interest is influenced by extrinsic rewards. Another consideration is it may be the novelty of working hard to get out of work that engages the situational interest. In other words, would a piece of candy arouse motivation to act in the same way?

The consensogram also showed the Capone activities as engaging situational interest. Consider the following table (see Table 5.10):

Table 5.10: Consensogram of Student Situational Interest in Capone Activities

Question	The Capone Activities “caught” and “held” my interest	I wanted to learn more about the content of this learning experience.	I enjoyed the lesson
Strongly Agree	11	6	16
Agree	7	4	2
Undecided	0	8	0
Disagree	1	1	1
Strongly Disagree	1	1	1

Eighteen of the twenty students present in class felt the Capone activities “caught” and “held” their interest. Enjoyment was also experienced by eighteen of the students. Although only ten stated that the lessons incited them to want to learn more, Mary expressed that a several students told her they were not honest about this question on the survey. Some of the students did not want their peers to see that they wanted to know more about the content regarding Capone.

When Mary reflected on the excerpts of the car race, she saw four aspects of the car race that contributed to the students’ experiencing situational interest: it *involved everyone*, it allowed the students *to move out of their desks* movement, it was *fun*, and it was novel to the curriculum of most high school classes. The following excerpts in the Think Aloud Session support this observation:

Me: Is the video providing confirming or disconfirming evidence that that the activities are engaging students’ situational interest?

Mary: Yes, I think it has. They all get more involved in what we are doing. I know I keep coming back to this, but the movement helps them so much. The fun seems to help them. They’ll have a sense of fun when they come in that comes from the games and that helps in bringing it all together. It

made it a lot easier for them to focus on the content. And I hope it shows on the next essay test. (TALS, 4/18/07)

Mary believed that the video showed confirming evidence of situational interest. She again was seeing *more engagement* among the students. Mary points out the role of novel movement in situational interest when she says, “I know that I keep coming back to this, but the *movement* helps them so much.” Mary sees that the children are now entering the classroom with a “sense of fun.” She attributes the dimension of fun to the situational factor of *games*. She feels that games allow all of the individual variables, situational factors, and the collative variables to be integrated together. Mary describes a game as an *easier* way for students to focus on the content. Mary was hopeful that her perception would be observed by better student cognition on the next essay test. Mary pointed to engagement, movement, enjoyment, and games as confirming evidence that the students were experiencing situational interest.

When I asked her what she saw as being salient, Mary saw the novelty of these variables in a secondary setting as playing a key role in eliciting situational interest. Evidence is provided in the following excerpt from the Think Aloud Session

Me: Do you see anything in the video as being salient?

Mary: I think that kids at the secondary level don't play games. In elementary school we play games to learn, because we want them to love to come to school, but when they get past about the 7th grade we seem to think they should be chained to their desks and take notes from the overhead all the time. Secondary students and adults like games and like to learn in a fun way just as much as anyone else does and I think we have forgotten that.
(TALS, 4/17/07).

Mary was now finding the value of creating learning sequences that engaged situational interest. She states that teachers at the secondary level do not use the situational factor of games in their lessons. She sees that teachers are motivated to use games at the elementary level

“because we want them to love to come to school.” This may suggest that Mary feels that secondary educators do not design lessons with the objective of motivating students. Mary’s view is that after seventh grade the secondary educators think that students should be “chained to their desks and take notes from the overhead all of the time.” Through her own observations in the study, Mary has come to an awareness that adults like games and learning in a “fun way.” She suggests that secondary teachers “have forgotten that.” In this excerpt, Mary explains that teachers need to intervene into the routine and repetitive nature of learning tasks. Unlike in the beginning of this study, she is saying that secondary teachers must design and use “interest-enhancing strategies,” such as games, to make boring tasks more engaging (Sansone, Wiebe, & Morgan, 1999). It was spring in this old neighborhood, and everyone was growing.

At the end of the hour on Tuesday, Mary went over the jigsaw assignment with the students. It must be noted that Mary came down with a bronchial infection and was out of school for the remainder of the week. The substitute teacher took the students into the computer lab, and she allowed the students to pick their own themes and their own groups to work with on the jigsaw. When the students were collecting information about each of the themes, Mary was not there to mentor each group with ways that they could incorporate the variables into their work stations.

5.5 Week Five of the Study

In week five, the students would be socially constructing the lesson through a jigsaw. The following table is a timetable for the jigsaw in week five (see Table 5.11 and description of the activities:

Table 5.11: Timetable and Collative Variables Used in Jigsaw

Date	4/23/07	4/24/07	4/25/07	4/26/07	4/27/07
Activity	Finish Stations in class as a group	Students jigsaw. They move from station to station.	Students jigsaw. They move from station to station.	Students jigsaw. They move from station to station.	Students jigsaw. They move from station to station.
Collative Variable	The students will integrate Surprise Novelty Ambiguity Indistinctness Complexity into their work stations.	Surprise Novelty Ambiguity Indistinctness Complexity Change Indistinctness	Surprise Novelty Ambiguity Indistinctness Complexity Change Indistinctness	Surprise Novelty Ambiguity Indistinctness Complexity Change Indistinctness	Surprise Novelty Ambiguity Indistinctness Complexity Change Indistinctness

The following title captures the essence of the activities in the fifth week of the study:

13. Students Construct Lesson with the Collative Variables: The Jigsaw

5.5.1 The Students Construct Lesson with Collative Variables: The Jigsaw

On Monday, Mary had returned. She had each group work together to design their work station in her classroom. The students were provided with different colored 22 inch by 28 inch poster board to make their displays for their work stations. After the students prepared their stations and created a work sheet that each of the groups would have to fill out at each of the stations, they were ready to jigsaw from station to station. The students spent Tuesday through Thursday moving from station to station. They were given a grade for the quality of the work station and for the worksheet that accompanied each station. At the beginning of each day, the students would set up their work stations. The students were given twenty five minutes to complete the activities at each station.

Mary had not been in the lab to facilitate how the students could integrate Berlyne into each of their areas; hence, much of their products resembled the activities that they had been experiencing. Some of the students did, however, create *novel* and *surprising* activities. Consider the following examples from some of the chairs at different work stations:

At the Prohibition work station, the information chair included a “Prohibition Football” game. After students read the information about the prohibition period, they would answer questions and kick a triangle-paper football through a goal post for each correct answer.

At the Cultural Conflicts and Values work station, the students had to complete a cartoon about the Scopes Trial and provide a caption that was consistent with the evidence in the cartoon.

At the Education and Popular Culture work station, one student wrote as the “Then and Now” activity “Back in the twenties, blacks weren’t allowed to play baseball with whites. They had to play in a different colored league. It wasn’t until Jackie Robinson came along that black and white men could play baseball together. Think of the changes in society that this caused. Explain on your worksheet how it is different today (Text on activity board).”

The creativity chair in The Twenties Woman and Youth in the Roaring Twenties had the students design a female super hero for the youth during these times.

These were just a few of the activities created by the students in the jigsaw, where they had attempted to integrate the collative variables.

After I had observed all of the work stations and viewed the video tapes, I took notes and memos and then wrote in my journal my interpretations. Consider the following journal entry:

Without a higher level thinking coach, most students take the path of least resistance with knowledge. When they are required to create the learning sequence, they mimic what they have observed in prior learning experiences. Their products most often mirror the reality that the expectation was not closely nurtured by the learning facilitator. So often in classrooms, the learning expectation is just handed to the students and left unattended until the point of evaluation. At this point, the teacher is often disappointed with the product that is handed back to them by the student. What is often not understood by the teacher is that evaluation does not just occur at the end. The perceptions of children must be attended to and fostered throughout the learning experience. Evaluation is moment by moment in the learning process. It hurt the students' products that Mary was absent from their construction of knowledge. They needed more nurturing as to how to incorporate the variables to catch and sustain interest with the jigsaw activities. Further, I overlooked that the design of this learning sequence may lead to monotony. The learning sequence was too much of the same for five work stations. Although the students had the liberty to fill the station with unexpected learning experiences or perturbations, I should have made the requirements different at each station to enhance novelty, change, and surprise. What I observe is that on the first and second day the students are engaged and interested. They are curious about what the other students have prepared. By the third and fourth day, they have become habituated. The work stations are too much the same. It is made obvious by their restlessness and their comments in the latter days as they move from station to station. In the student interviews, the sentiment was summed up by a student 'I liked learning at the work stations, but it would've been better if there was some different stuff (MIS)' The student was asking for more novelty and surprise in the expectation of each of the chairs of the work stations. I saw the same flaw in the design of the advertising lesson—the stations were too much of the same. I needed to vary the requirements for each station. The consensogram that was given at the end of the activity confirmed my thinking (see Table 5.12).

Table 5.12: Consensogram of Jigsaw Activity

Question	The learning sequence lesson was exciting	I was interested in the learning experience.	The lesson held my focus
Strongly Agree	11	7	12
Agree	0	0	0
Undecided	9	13	7
Disagree	1	0	1
Strongly Disagree	0	0	0

Although more than half of the students perceived the jigsaw to be exciting and cause them to focus, the strong number of undecided perceptions indicates that the students became habituated and there were problems with the design of the jigsaw. It needed more novelty and surprise at each of the work stations. Even more, the students needed more nurturing in their social construction of knowledge. (JE)

Without proper mentoring, students will always follow the path of “least resistance” in their learning experiences. Without the proper facilitation that guides an understanding of the expectation, students will mimic prior learning experiences in an attempt to compensate for their lack of cognition. Student products often reflect this lack of nurturing in facilitation. It is often the case that teachers hand out the learning expectation without nurturing it, and the product is not looked at until some formal summary evaluation takes place. Because of this lack of attentiveness on the educator’s part, the students’ products are often met with disappointment by the educator; however, that should be expected. The teacher did not monitor the product throughout the learning experience. Many educators do not know that evaluation is a moment-by-moment process in learning; for some reason, teachers think it only occurs at the end of a

learning sequence. The students' work stations were hurt because such nurturing did not take place. The design of this lesson led to student monotony. The students became habituated by the third day. I needed more variation or novelty and surprise integrated into each station to catch and hold the students situational interest.

The students' perceptions fell into three categories. First, a number of students felt that *confusion* detracted from their situational interest (n=7). One person summarized the sentiment of her peers when she stated "I don't understand what we are doing, and she is not really explaining it too well—probably because she has been absent (MIS)." The student expresses that she did not understand what was expected. She did not feel Mary was explaining it too well. She felt the confusion could possibly be attributed to Mary's absence. This may suggest the importance of the situational factor of *modeling* (Bergin, 1999) in engaging situational interest. Mary may have needed examples to model how to integrate the variables and may have needed to closely monitor students for confusion as to what was expected.

Second, the students were frustrated with the effort of their peers in their groups (n=5). The individual factor of *belongingness* and the situational factor of *social interaction* were viewed from a different lens when it was a bottom-up activity. Now, the students had the responsibility to create work stations using the collative variables. Some of the students' confusion with what was expected, unwilling dispositions and or lack of effort was creating frustration between each other. This was much like Mary and I at the beginning of the study.

Consider the following excerpts from the student interviews:

Me: Has what you have been learning been complicated or too simplified? Has this attracted or detracted your attention from the lessons. Provide examples. (MIS)

Juan: Yes. I would say the hardest part of the past six weeks was the posters (work stations) that we had to make. In our group, we all had our own job

and we relied on others to have their stuff done-- but everyone works at a different pace but in the end it all came together. It was hard because we all had to work as a group and rely on people and that made it different. (MIS)

Nora: Yes, the work stations. I thought it was cool, but some of the kids were sloppy and didn't give very good directions. They went through it too fast to get it done, and I think they could have done better on it. (MIS)

Both Juan and Nora felt the jigsaw was the most complicated of all of the lessons, and they both cited aspects of this learning sequence that detracted from the attention quality of this lesson. Juan felt the fact that the students had to rely on others to have their part of the jigsaw done complicated the activity. He notes that all students work at a different pace; however, he saw it all come together in the end. Having to work in a group and rely on people made it a different experience in learning for Juan. Although Nora thought the work stations were "cool," the fact that some of the kids were sloppy and didn't have good instructions contributed to her attention quality. Nora's attention was distracted by the poorly crafted work of her peers. In her estimation, the students in her group should have spent more time on to create a better product. To encourage the situational interest dimension of attention, this may indicate that there needs to be checks and balances in a cooperative learning experience to adjust for student accountability for the quality of their product. It also may indicate that the collative variables and the individual and situational factors were not integrated well enough by the students to encourage stronger situational interest.

Finally, despite the confusion and the disappointment in the efforts of a few of their peers, many of the students liked the jigsaw activity. When I asked the students in the interviews which activities they had enjoyed most, the work stations was one of the activities most frequently mentioned in the student interviews (n=7). This is consistent with the consensogram (see consensogram included in the above journal entry) where eleven students found the work

stations enjoyable. Consider the following excerpts that are representative of the students' responses.

Me: Have you enjoyed learning over the past six weeks? If so, tell what characteristics of the lessons you have enjoyed most? (MIS)

Mike: I enjoyed the work stations we had to go around. We had a game called "Prohibition Football," and we answered questions to see who could kick the football. (MIS)

Cathy: Personally, I like more hands-on group activities rather than independent work, it means more enjoyable learning. When we did our group activities where we made our own posters at the work stations and checked other people's posters at their stations. I like that. (MIS)

Mike enjoyed the work stations. He especially liked the Prohibition Football game, where the students had to answer a question correctly to flick a paper football through a goal post. Nora feels that more *hands-on* and *group activities* make learning more enjoyable. *Hands-on* and *social interaction* again supports Bergin's claim that these situational factors play a role in fostering situational interest. It must also be noted that the consensogram revealed that 13 students were undecided if this activity held their interest. This was the only activity where the *collative variables* and *situational factors* were not mindfully integrated by the designers of the lesson. This may indicate that more student situational interest in "bottom-up" lessons may have a different set of situational interest variables that need to be understood through further research.

When Mary and I viewed the video, her observations were similar to the students as well as my observations. The following evidence from the Think Aloud Session supported this consensus in data.

Me: What sense do you make of this excerpt?

Mary: They didn't know what to make of it; yet, I think if I had done an example first, and they saw how the ambiguity was supposed to be, they would have had an easier time with it. The ambiguity can help, and help with the teaching part, but not as far as the learning part. I think too much of it, causes too much confusion. Next year, I am going to make one first, so they can model it—so that they can see how the political cartoon can work and how it can demonstrate inferences with the times and so forth. Some did very well (creating the work stations) on their own. It wasn't too complex and it worked really well, like the Prohibition Football. But certain parts of the station were hard, that part was usually the quote area and the cartoon areas. (TALS, 4/30/07)

When she states, "They didn't know what to make of it," she noted that the students were confused about how to integrate the collative variables into the work stations. She felt the students understanding of the collative variable of ambiguity would have been better understood by the students if she had provided an example before the work stations were designed. Mary believes that ambiguity has value in the teaching aspect of learning; however, she believes in learning that *ambiguity* contributes to confusion in student cognition. Mary says that she would *model* it next year. This supports Bergin's claim (1999) that modeling is a situational factor that contributes to situational interest. Mary felt some students had done well in creating the work stations and pointed out the *game*, Prohibition Football, worked out well in inciting situational interest. This supports the claims in interest literature that *games* are a situational factor that facilitates situational interest. Mary believed that the ambiguity involved in the cartoon and quote stations were "hard."

As stated by some of the students (see above), Mary observed that the students did not like to have to be responsible for their peers learning experience. Consider the following excerpt:

Me: What do you see as being salient?

Mary: Some of the students did not like being responsible for the learning of the others. One student said to me 'I feel like I am babysitting because the others in her group did not understand and she had to explain everything

to them, and she did not like that. But then when she couldn't figure out another cartoon, and the student she had explained things to help her because she did not have anything written down, it bothered her that the other students ended up helping her.' (TALS, 4/30/07)

Mary notes that in this “bottom-up” activity, or jigsaw, that some students had negative feelings about being responsible for other students learning. She cites a student who viewed that the activity made her feel like she was expected to “babysit” her peers’ learning. Babysitting other students learning was described by the student as having to “explain everything to them (her fellow students in the group)” when these students didn’t understand. It also “bothered” this student when other students had to explain things to her. This may suggest that when students are expected to socially construct knowledge that there is an anxiety that accompanies the responsibility of having to be accountable for each other. Such anxiety in a learning experience may detract from situational interest. Because instruction is usually done by the teacher in “top-down” lessons, the social construction of knowledge is not a familiar learning experience. This may account for why the students indicated that they were uncomfortable with helping their peers understand the knowledge in the “jigsaw”

Mary did observe confirming evidence of situational interest. Consider the following excerpt:

Me: Do you see confirming or disconfirming evidence of situational interest?

Mary: Yes! Because of that football game! It’s funny how something like that, taking something so simple can take a group of 15 year old boys to wanting to do what you are doing so they can do it! (TALS, 4/30/07)

Mary points out that the Prohibition football game was evidence of situational interest because of the number of boys who wanted to do it. She sees the eagerness to recall the subject matter in order to flick the paper football as evidence of student situational interest. Mary also

found it amusing that something so simple as flicking with your finger a folded up piece of paper through a goal post could cause such motivation in fifteen year old boys.

In our Think Aloud Session, Mary also identified the situational factors that she felt contributed most to the situational interest in this learning sequence. This is brought to light in this excerpt.

Me: What do you see as contributing most to the situational interest?

Mary: I would say the movement. With these kids the most important piece is the movement—getting them up and around the room in an organized fashion. I don't think they get a lot of that during the day. I think they are enjoying what we are doing, but they are also asking me questions like, should I outline the chapter? You know more traditional stuff. I think of Adam, and I asked him, 'Do you want to?' And he said, 'Well I just figured we would have to for the test' and I said 'Do you think you picked up everything for the chapter by going around the workstations?' And he said "Yes, but I thought we should read the chapter.' So, some of the better kids were trying to pull back the more traditional thinking. This was like an extra. (TALS, 4/30/07)

Mary was still pointing to the novelty of the movement. Mary sees it as novel because she doesn't believe students are experiencing a lot of movement in other classes. She believes the students are enjoying the work stations. This provides evidence for the dimension of Instant Enjoyment. She also points out the novelty of learning the sections of the chapter in work stations through the jigsaw by pointing out that "some of the better kids were trying to pull back the more traditional." Mary cites a student who wanted to know if he should outline and read the chapter, despite having the material in each section reinforced at the work stations. Mary viewed the student who wanted to also outline the chapter as an "extra." This may suggest that better students do not trust their understanding of a chapter when learning is enjoyable or where it is left to the responsibility of each other or when subject matter is being reinforced in an unfamiliar learning experience.

Finally, Mary did not believe that the jigsaw held the students' situational interest over time. Consider the following dialogue in the Think Aloud Session.

Me: Do you see the jigsaw as holding the students' situational interest?

Mary: No, I think other activities did. I think the units are good and I think it is good for the kids, but they tend to be drawn out more. The attention starts to dwindle after awhile. I don't know necessarily how to fix that. We focused primarily on Adam's group and they were done. Other groups were still working like Matt's group, and with others, it was just the nature of the activities—some were longer and some were not as involved. I was thinking that after they do so many stations and it was at the half way point they have to go through a check station. They would fill out something and then get a reward. They need the goals and they need to know what they know. (TALS, 4/30/07)

Mary felt that some of the other activities held the situational interest better than the work stations. She felt the learning sequence was “good for kids” but she saw that the stations “tend to be drawn out more.” She noted the students' attention dwindled at the work stations after a while. As I and the students had observed, this might suggest, that the stations needed to be integrated with more of the unexpected learning experiences at each station. Each station was too much the same, and this was resulting in habituation. Mary also suggested that a “check station” may help the students to understand what they do and do not know. Mary suggested providing a reward for filling out a sheet that checked for student understanding.

Mary's perception called for the expectations of the work stations to be more varied and the need for the teacher to model expectation and facilitate in the social construction of knowledge.

In the sixth week of the study, Mary would design a scavenger hunt on her own. This is discussed in Chapter Seven.

5.6 Chapter Summary

Using spring season as a metaphor to illustrate the nurturing of the learning context and blooming of student situational interest, this chapter has critically discussed the design and implementation of a thirteen lesson learning sequence on *Life During the Twenties in the United States* that integrated Berlyne's collative variables with situational and individual factors (Bergin, 1999; Schraw, Flowerday, & Lehman, 2001). Situational factors identified by students that influenced their interest were also incorporated into each lesson to investigate how situational interest grew.

This chapter was a manifestation of how a learning theory grows. For creating situational interest, evidence in this chapter has shown the design of a learning sequence is codependent on an educator's pedagogical disposition and inclination; the collative variables; individual and situational factors (Bergin, 1999; Schraw, Flowerday, & Lehman, 2001); situational dimensions proffered by Chen Darst, and Pangrazi, (1999) as well those grounded in this study. Evidence also suggested that situational interest must be viewed holistically and that each of the foregoing aspects play a critical role in the creation of situational interest.

Chapter Five, like chapter 4, supported that a teacher must be theoretically receptive to collative variables designed lesson sequence to elicit situational interest. At the beginning of the planning periods, Mary resisted disturbing students with collation or perturbation. The book that provided ways to integrate the collative variables "scared" her. As Mary and I began to design the learning sequence with collative variables, she observed her students' behavioral changes. Students were more engaged in learning. Even students who did not normally participate in activities were active. Mary began to feel safe integrating the concepts of *novelty* and *surprise* in her design and implementation of the learning sequence. In the "advertising and car activity,"

Mary conceded that *ambiguity* has value. Because Mary was not open to designing lessons with higher level *perturbations*, *incongruity*, and *indistinctness*, the relation of these variables to situational interest were not investigated. These collative variables, Mary felt, would make the special needs or lower level students feel uncomfortable. Mary's flexibility to attempt some variables and not others indicated that educators need to feel safe, open, and willing to design and implement lessons with collative variables. Thus, to validate the relation between the collative variables and situational interest, teachers would need to develop professionally a stance of theoretical openness to designing and implementing lessons that incorporate variables to engage situational interest.

When the collative variables of novelty, surprise, and ambiguity were integrated with Bergin's (1999) individual and situational factors in the learning sequence, students instantly exhibited one or more of the following positive interactive experiences: enjoyment, attention, engagement, cognitive behavioral change, or exploration intention. Some lessons, for example, the "Duck and Cover" only caught situational interest. Whereas, "the assembly line activity" caught and held situational interest. Hence, the degree of situational interest experienced in a learning sequence depends upon each lesson activity that incorporates perturbation.

The results provided in this chapter support the importance of integrating the *collative variables* with the *situational and individual factors* into the design of a lesson to elicit student situational interest (Bergin, 1999; Schraw, Flowerday, & Lehman, 2001). The students' listing in the "Out of the Door Survey" of some of the same situational variables that Mary and I thought influenced their situational interest validated the strong relationship between collative variables, individual and situational factors, and situational interest. Without being aware of Bergin's claims (1999), the students identified that *hands-on activities*, *social interaction*,

novelty, discrepancy, games, discussions and humor fostered situational interest. Students also identified *movement, teacher enthusiasm, interest inventories, movies, and music* for creating situational interest. The influence of *meaningful choices and sufficient background information* on student situational interest claimed by Flowerday, et al, (2001) also was grounded in the evidence in this chapter. In particular, *access to sufficient background information* emerged as significantly influencing situational interest. The individual factors or affective qualities that emerged in this study were *relevance, and belongingness*. Including all students in a learning sequence or creating belongingness surfaced as the most meaningful factor that contributed to situational interest. What was observed was when the collative variables were integrated into more situational and individual factors that more situational interest occurred. This indicated collative variables must be tied to individual factors and situational factors in a learning sequence design to elicit situational interest.

Finally, this chapter provides evidence that positive interactive experience is a category that was consistently related in the construct of situational interest in lesson design. Four of the dimensions identified by Chen Darst, and Pangrazi (1999) were grounded in this study as contributing to situational interest. *Attention, novelty, instant enjoyment, and exploration intention* were experienced with a high frequency throughout the learning sequence. Challenge did not emerge with significance. This may be due to the fact that only low and medium level perturbations were designed in this study. *Engagement* was not a dimension claimed by Chen, et al, (1999) in their multi-dimensional construct; however, Mary consistently identified *engagement* as an indicator of situational interest. This suggests that engagement may be an important dimension of situational interest that was overlooked in the work of Chen Darst, and Pangrazi (1999). Another aspect of positive experiences that was not identified in the work of

Chen, et al, (1999) was student behavioral change. *Greater participation, more involvement in discussion, and more work completion* were positive experiences associated with situational interest.

In spring, as in this chapter, Mary and I watched situational interest grow. There were times as in the Model T activity when the collative variables and situational and individual factors nurtured a meaningful moment in situational interest. There were also times when the ground of our learning sequence was ill prepared to catch and hold situational interest. Yet, in all, it was a season that gave birth to a better understanding of situational interest.

CHAPTER SIX

SUMMER BLOSSOMS IN VIVID COLORS AS STUDENTS' PERCEPTIONS OF LEARNING EXPERIENCE

6.1. Introduction

Chapter six portrays the summer season of this study. The warmth of Mary's pedagogical ground in designing a learning sequence with situational interest activities inspires students' perceptions of their learning experience. Chapter Six brings to light students' *situational interest* being captured and held when Mary's implements the *Life During the Twenties in the United States* learning sequence over a six-week period. Students' perceptions of their learning experience are likened to the summer blossoms in vivid colors. Students' test scores and their explanation of how situational interest influenced cognitive performance are the flamboyant blossoms of the summer.

In Chapter 5, *situational interest* was investigated from how it grew in each of the lessons. The teacher, the researcher, and the students reflected on the variables and the situational interest actors that had sprung forth in each of the lessons in the learning sequence. This chapter primarily explores students' perceptions of the variables and the factors of *situational interest* from a collective perspective of the learning sequence. Pertinent questions related to students' collective perceptions of situation interest are:

1. Did the learning sequence capture 10th grade students' situational interest when Berlyne's collative variables were incorporated?
2. Did students hold the situational interest?
3. Do students' test scores support students' perceptions of situational interest?

The purpose of the foregoing research questions was to understand the nature of *situational interest* in lesson design based on how students' viewed their learning experience. In other words, I wanted to understand students' overall perceptions of their relation to the learning sequence activities and how this relatedness contributes to the building of a holistic and interdependent theory of situational interest. Data Sources to answer the above questions are as follows:

1. Verbatim transcripts of audio-recordings of My Interviews with Students about their sense-making of the lesson sequences (MIS)
2. Students' test scores from Mary's grade book.

From these data sources, three major variables that influence situational interest in lesson design arose:

Activity Features

Affective Qualities

Positive Interactive Experiences

6.2 Activity Features

Activity features grounded in students' perceptions of situational interest are: (1) novelty, (2) group work, (3) active learning positives, (4) information characteristics, (5) discussion consequences, and (6) games. The activity feature and its frequency of influence on situational interest based on students' interview transcripts are indicated in Table 6.1 (see Table 6.1).

Table 6.1: Activity feature and frequency of influence on situational interest

Activity Features	Frequency of Influence on Situational Interest
Novelty Traits	52
Group work	52
Active Learning Positives	36
Information Characteristics	34
Discussion Consequences	20
Games	19

Novelty traits and group work were perceived to be the most salient features of the activities in the learning sequence. The students next perceived active learning positives and information characteristics as activity features that influenced their situational interest. Discussion consequences and games also consistently emerged as influences of students' situational interest. In the following sections, each activity feature is discussed

6.2.1 Novelty Traits

To the question, "Would you describe the learning over the past few weeks as "new-fashioned" or "old-fashioned," 18 out of 20 students described learning as "new-fashioned" and two students described learning as a "little of both." The following excerpts are representative of why the students felt new-fashioned learning created their situational interest.

Chad: New-fashioned! Because we are doing activities and we are doing things in groups, trying to work together to get the activity done. Before, in other classes, you *just* get the worksheet, do it and turn it in. (MIS)

Bill: New-fashioned. Because when I think of history class all I remember from previous years is reading the book, drawing the maps, taking notes and timelines and stuff. It was mostly boring. I honestly don't remember doing anything hands-on in history before. (MIS)

Carol: I would have to say new-fashioned because we actually got to interact more. In the first part of the year, we just listened and took notes. Now, we are doing different things. (MIS)

Chad describes his learning experience in other classes as getting a worksheet and turning it in. To Chad, students are now learning a new-fashion way. Contrary to his past learning experience, students were *doing activities, doing things in groups* and being able to *work together to complete the activity* as part of the learning sequence. Bill is only able to remember from previous history classes having to read the book, drawing maps, taking notes, and doing timelines. He suggests such learning experiences are *mostly boring*. On the other hand, he sees the current learning sequence as a *hands-on* approach to history. A hands-on approach to history was different because he has no memory of ever doing activities like this in his history courses. Carole views the learning sequence as new-fashion because she was *able to interact more*. It is not, however, clear whether she means with subject matter or with her classmates. She describes class as doing *different things* over what she had experienced earlier in the year. She points to her learning in the first part of the year in history class as *just listening to the teacher and taking notes*.

Eighteen students associated doing activities, doing things in groups, working together to complete activities, hands-on learning or interacting more with new fashioned learning. What must also be noted is students' statements about teaching strategies such as *taking notes, doing work sheets, or listening to the teacher*. Such statements were consistently qualified with the word "just." If the word *just* is being used to mean *merely*, this may suggest that the students minimize learning strategies that they view as routine.

Throughout the interview transcripts, the students (n=34) expressed disdain about the routine of reading the text book, taking notes or doing work sheets. Eighteen of the twenty students perceived their learning experience to be different from other classes. The disdain for routine and the perception that the learning sequence was different may support the supposition that teachers are not creating lessons and environments that motivate situational interest in content driven classes (Larson & Richards, 1991). It may further provide evidence that instruction is becoming increasingly routine and repetitive (Shernoff, Schneider, & Csikszentmihalyi, 1999; Goodlad, 1984). Moreover, “feeling bored” (n=17) by such routine learning also emerged as a consistent theme similar to studies by Larson and Richards (1991) and Shernoff (2003).

The students identified only *novelty* as a contributing variable to their perception of “new-fashioned and not the other collative variables (*ambiguity, indistinctness, surprise, incongruity, or complexity*) that were embedded in each of the activities. Students in response to the same interview question on the fashion of the learning sequence viewed the learning in the following way:

Cathy: I don't know if they have ever done this before so I would say “new-fashioned”. (MIS)

Phil: Kind of in-between. I know people who have used it before, but this was the first time I had seen it. (MIS)

Joe: New-fashioned because we have done stuff that we haven't done in the classroom before. (MIS)

The students suggest that learning in ways they have never done before made the learning experience new-fashioned. This is confirmed when Phil states, “...this was the first time I had seen it” or when Joe stated, “...stuff we haven't done in a classroom before.” These statements imply that instruction is becoming more routine. Sophomore students in high schools may not

have the ability to specifically identify the collative variables that were integrated into each lesson, but the responses depicted in the excerpts above suggest the students are cognizant or aware that the lesson design was a *new way* of teaching.

Desiring to disturb a student's mental equilibrium, Berlyne's collative variables—specifically, novelty, surprise, ambiguity, and change—perturbations from low to moderate were embedded into the activities throughout the learning sequence. It was the hope of this research that all of the collative variables may be explored in the multifarious nature of situational interest. *Novelty*, however, was the only *collative variable* that was grounded in the student interviews as an activity feature that influenced students' *situational interest*. This may be because a sophomore in high school does not have the vocabulary to differentiate among the collative variables.

A statement made by Berlyne and echoed in the work of Kintsch (1986) may contribute understanding to the students' ability to cite only novelty as an activity feature out of all of the collative variables. Berlyne stated, "What creates interest is not novelty *per se*, but novelty in comparison with a particular set of circumstances" (in Kintsch, 1986, p.183). Eighteen students believed that learning sequence created situational interest because it was novel or different in comparison to their prior learning circumstances. This may also be true for the other collative variables. Each collative variable has the same potential as novelty to create perturbations that would be *novel* in comparison with the students' particular set of prior learning circumstances. The limitation is the students' inability to point to it. For this reason, the other collative variables should not be dismissed as playing an important role in designing lessons to create situational interest. Made obvious in the findings was that students were more capable of identifying the

situational factors in a lesson that contributed to their situational interest over the collative variables.

6.2.2 Group Work

The grounded blossom of situational interest created by *new* fashioned learning experiences include doing activities, doing things in groups, working together to complete activities hands-on learning or interacting more with the subject matter. Some of the situational factors identified in the Out-the Door Survey were also observed in the interviews as activity features that contribute to student *situational interest*. Out of all of the situational variables used in the lessons, *group work* resulted in most frequency in the transcripts of the student interviews.

The ability to learn together in groups (n=52) surpassed all other activity features as a situational factor that the students perceive creates *situational interest*. Consider the following student excerpts:

Lynn: Group work—most people like working together because it is easier for them. (MIS)

John: I like working in groups and having activities. (MIIS)

Juan: You got to work together and that was fun. (MIS)

Matt: I think students like being able to talk and socialize. Even if there is a little bit of talking about other stuff, they can still get their work done in an amount of time. Instead of just sitting there and having the teacher tell you about it, I like group work and working with people. (MIS)

Liking to work in groups was cited thirty-six times in the student interview transcripts. Lynn, John, and Matt “like working together” on lessons. Matt points to *liking* group work compared to sitting and listening to a teacher lecture. Lynn suggests it is *easier* for students to understand the subject matter when they work in groups.

When the collative variables were nested into the situational factor of group work, the students perceived the positive experiences of *fun*, *liking*, or *easiness in learning when working together*. These are conditions that relate to their situational interest.

6.2.3 Active Learning Positives

Thirty-six times throughout the student interview transcripts the situational factor of *active learning* was cited as contributing to the creation of students' situational interest. Representative excerpts revealing important aspects of learning that create situational interest are illustrated:

Eddy: I think I keep up with the activities that we get to interact with

Tony: Since I was actually taking part in all of the activities, I actually remembered rather than just doing a work sheet, because I wasn't paying attention before. (MIS)

Steve: I used to dread going to history because it wasn't a fun lesson, but now we get to interact in all of the lessons. Right now, I kind of look forward because I know we are doing something that will catch my interest, so it's probably one of the classes I look forward to. (MIS)

Cara: Yes, because she gets you into the activity where you have to move around or if you have to have a ticket to get out the door, so you can't get out. But the learning is fun anyway so you want to get in to it, but before we would drift off taking notes and fall asleep. (MIS)

Eddy relates that he gets to interact and this helps him to keep up with the subject matter. Tony suggests that he participating in the activities helps him remember what he learns. He contrasts his current experience of learning with his previous experience of doing worksheets which deter him from paying attention to what is taught. While Eddy and Tony focus on participation in activities with respect to the learning of subject matter, Steve focuses on the fun of learning. Prior to situational interest embedded lessons, Steve dreads the history class because learning has not been fun. Because of the interaction and doing something that catches his

interest, history is a class that Steve looks forward to. Like Steve, Cara notes the fun of learning. Cara cites examples of activities that did not allow her to of the door without contributing so she must but be fully involved. Like her classmates, she contrasts with her earlier experience of learning history in that class. She, in fact, drifts off taking notes and falls as sleep.

As the selected excerpt reveals, the students associate lessons with active learning that leads to a positive experience—*keeping up in class, retaining information, and having fun*—occurs 24 times in the student interview transcripts.

6.2.4 Information Characteristics

The importance of background information to create situational interest was readily expressed by students (See Chapter 5 for details). The students perceived their situational interest suffered when there was a deficiency in information. The students believed deficient background information contributed confusion to the learning sequence. At the end and during the learning sequence, students were asked to reflect on their experience. Representative excerpts of nineteen students' reflections about the need for sufficient background information to create situational interest are provided below:

Nora: If they (teachers) have enough charisma to say what they are trying to say, and get descriptive enough. (MIS)

Kyle: On the immigration policy, all that seemed like stuff that everyone knows and we were just going over it. Add some fun facts things (MIS).

Mike: Yes. It's more interesting (when vivid outside information is added to the lesson), sometimes the book doesn't really describe something, because the textbook give you the view of a person and if you go beyond the textbook you get more peoples' points of view. (MIS)

Nora desires teachers to be descriptive and talk with charisma. This may be that some teachers give instruction to do something but do not actually teach. Referring to the lesson on immigration policy, Kyle states that they were merely going over what everyone knows. He

wants “some fun facts” to be added to what is already commonly known. Mike alludes that the textbook is limited to the views of the authors. He wants to go beyond the book in search of information so that various peoples’ views are considered. Thus, Mike makes the observation that the information in textbooks “doesn’t really describe something.” He wants teachers to provide *more points of view* than what the textbook offers when information is provided as part of a lesson. Mike suggests having more points of view of subject matter makes information more interesting.

Descriptive information related with charisma, information with “fun facts” other than what is already known, and information with more people’s views seem to create situational interest for students. Students are pointing out to characteristics beyond simply information. That is information must be described with charisma, facts in the information must be fun, and information must be what is not already known. These three characteristics of information would lend to situational interest in a lesson.

The emphasis on integrating vivid description of information or information with fun facts may support the interest-based parsing, for Shank (1979) claims people focus their attention on information judged to be interesting. Students’ perceptions may also support Kintesh’s (1986) distinction between *emotional* and *cognitive* interest. For example, asking for *fun facts* or to relate information with charisma may be merely a request for information with an arousal function to create emotional interest. A learning sequence made vividly descriptive or lively or fun enchants situational interest.

6.2.5 Discussion Consequences

Contained in the following sample excerpts are three consequences of carrying out discussion that seem to have influenced situational interest of twenty students.

Andrew: I like to see what others are thinking, not just what I am thinking, but to see if people agree with me or disagree. (MIS)

Tyler: So I can see that I am not the only one who thinks like that—that I am not alone, I guess. (MIS)

Sam: It showed your opinion and others' views. It was interesting to see how people felt about issues. It helped to hear why someone would feel that way about something and different situations. (MIS)

Rianne: I like it when we talk about it. It makes it more fun, and it helps to pay attention more. (MIS)

Andrew not only wants to become aware of what he is thinking but also of others, and whether or not group members agree with him. Tyler likes to know that he is not the only one that thinks a certain way and that he is not alone in a particular way of thinking. To Andrew and Tyler, a sense of agreement in a discussion creates situational interest.

For Sam, discussion activity reveals one's opinion and those of others that are different. He finds discussion to be interesting because he will come to know how people feel about issues and why someone feels about something in a particular way in particular situation. Sam, unlike Andrew and Tyler, suggests that he will come to know people's differed feelings when they take a particular stance. Differed feelings in a discussion create situational interest.

Agreement and differed feelings are features of belongingness in a learning community. This may be illustrated when Tyler states, "I can see that I am not the only one who thinks like that—that I am not alone." Tyler does not want to be alone in his thinking. He wants his thinking to be shared with others. Andrew's statement also suggests a sense of belonging when he states, "I like to see what others are thinking, not just what I am thinking, but to see if others agree or disagree with me." A sense of belonging is also noted when Sam states, "It helped to hear why someone would feel that way about something and (in) different situations." Sam's statement suggests that hearing the thinking of his peers helps his thinking. A discussion activity creates

situational interest because students experience a sense of belonging within a community of learning and are able to learn from the reasoning of their peers in a lesson or engage in social construction of reasoning. The students are alluding to lessons that ought to be designed so that they experience a sense of *belonging* and heighten situational interest.

Rianne seems to like the subject matter when they talk about it. Discussion makes the subject matter more fun and compels one to pay more attention to the subject matter. Rianne's view on the value of discussion is not on people's agreed upon ideas or differed feelings but on the affective qualities (i.e., like, fun, attention) of learning the subject matter. Thus, affective qualities of learning in a discussion create situational interest.

Consequences of discussion--belongingness (agreed upon ideas and differed feelings) in a learning community and affective qualities in a lesson--are salient in creating situational interest. Students' experience of belongingness and affective qualities for learning through discussion are as blossoms permeating scent in the summer.

6.2.6 Games for Learning

In the Out-the-Door Survey (see chapter three), the students identified games as a situational factor that influenced their situational interest. Wanting an opportunity to investigate the role of games in situational interest, Mary and I integrated games in the learning sequence. In the individual interviews, nineteen students identified games as an activity that "caught" and "held" their situational interest. Consider the following representative excerpts:

Bill: Yes, (his situational interest was caught and held) because it was another game and you got to work with other people and try to find information and people got to ask you questions—kids in class asked the questions and played together. (MIS)

Lynn: Activities or group activities something that is fun that goes along with it so they will understand it better, like a game or a reward or something that the kids would enjoy. (MIS)

Cara: No I don't really like to play basketball, but it was more fun in class, because we got to play a game to make a review rather than doing a worksheet and stuff. (MIS)

Chad: We got to play a game when we were doing work. (MIS)

Juan: Our group got Prohibition and I like learning about that and what happened during that time. The games that we can make are pretty fun. (MIS)

To Bill, games caught and held his situational interest because he was able to work with others in his class, find information, and students were able to ask questions and play together. Lynn's interest is created in lessons when activities or group activities like a game or a reward make the learning more enjoyable. Lynn suggests learning that is fun helps students understand the subject matter better. Although Cara does not like to play basketball, like Lynn, she views games as a fun activity. Cara views playing games in learning subject matter as being more fun than "doing a worksheet and stuff." Just as Cara found games as an activity that relieved her from work sheets, many students (n=12) suggested that games create situational interest because it allowed them to play while learning. Chad echoes Cara's point that students like to play while learning when he says, "We got to play a game when we were doing work." Juan observed the games the students were able to create themselves in the work stations as fun. Playing games to learn content was associated with positive interactive experiences of fun for students.

Games associated with positive interactive experiences blossomed situational interest.

6.3 Affective Qualities

Influencing the students' situational interest in Mary's class were two affective qualities. They were *subject matter relevance* and a *sense of belongingness*. Each affective quality and the corresponding number of student citations in the interview transcripts are presented in Table 6.2 (see Table 6.2).

Table 6.2: Situational Interest Affective Qualities

Affective Quality	Frequency of Affective Quality
Subject Matter Relevance	44
A Sense of Belongingness	26

6.3.1 Subject Matter Relevance

When the students were asked in the individual interview what makes subject matter interesting in a lesson, fourteen out of twenty students pointed to the affective quality of relevance. Representative excerpts are as follows:

Ryan: If there is something I don't care about, I don't care to learn it.
(MIS)

Mike: Like in math class, if I never see it in the real world, I don't really care and I don't try hard. But if it is something I am going to use in the real world, I try harder. (MIS)

Phil: Teachers know that just doing exercises is boring—but they just do it and no one really pays attention. We need to relate to it to care about it. (MIS)

Joe: Relevance keeps my interest. If it is not relevant, I don't really want to know. (MIS)

Carole: I think it is important to engage student interest. Some stuff we don't know anything about and we find it more interesting when we can relate to it. And we eventually learn more about the subject. (MIS)

Sam: Teachers should help the students to understand the information so they can use it in their own life. They shouldn't let it go in one ear and out the other. (MIS)

Ryan does not care to learn something if he does not care about the subject matter. Mike does not really care for or try hard in a lesson if he never sees it relating to the real world. He

refers to his math class as one that does not relate to the real world. Mike affirms that if he knows he would be applying what he learned in the real world, then he will try harder. In fact, Mike relates the notion of “not care” to what is not related to the real world or something that he cannot use in the future. Phil also says in order to care about the subject matter that students need to relate the subject matter to their lives. Phil feels that teachers know that assigning students exercises in a textbook is boring; however, teachers continue to do it. He further notes that even though students find assigning textbook exercises is boring, no one pays attention to such teaching behaviors. Joe states the relevance keeps his interest. He states firmly that if the subject is not relevant, he does not “really want to know.” Carole thinks that it is important for a teacher to engage the student’s interest in the subject matter. The “stuff” that she does not know about, particularly if it can be related to real life, it will make the subject matter more interesting. As the result, Carole suggests that students will learn about the subject. Sam goes one step further. Sam wants teachers to help students understand subject matter so that they are able to apply it in their own lives. He believes that a teacher should stop from letting information going one ear and out the other.

Ryan, Mike, Joe, and Phil stated that when they cannot relate to the material or see its real world application, they don’t *care* to learn it. Like these students, the students wanted subject matter to be revolving around real life application. Caring about subject matter, relating to subject matter, seeing real world application, and using subject matter to real life are all characteristics of relevance. All six representative students agree that making the subject matter relevant motivates specific learning behaviors such as *caring, trying harder, or learning more*. This may suggest that to create a learning environment where students care about knowledge, a teacher should begin lesson design with a clear understanding of how the content is relevant to

the students. Situational interest that Mary created through various activities blooms into students desiring to care about subject matter. Knowing how subject matter relates to students' lives is a blossom of situational interest.

6.3.2 A Sense of Belongingness

Situational interest created a sense of belongingness in the “assembly line activity” (see Chapter Five for details). When students described the various aspects of the learning sequence that contributed to their situational interest, the affective quality of *belongingness* was observed twenty-six times in student interview transcripts. The following excerpts are representative of the characteristics of “belongingness” that influenced situational interest:

Mike: Probably because everybody does it. We all get it more. I don't like it when just a few do it, and the people that aren't paying attention don't usually get it. (MIS)

Cathy: The whole class was involved, and if one person did not get their part done, the whole class was affected. (MIS)

Juan: I liked that everyone was doing something different but we were still working together. (MIS)

Steve: It was hands on where we all had to work together to do it. (MIS)

Nora: Everybody liked it. We tried to do our best because it was a race. Everyone seemed to enjoy that one a lot. (MIS)

Of the 20 students, 16 students sensed belongingness when they worked together. Mike does not seem to like a learning experience where only a few participate. Mike draws a relationship between every student participating in an activity and all students understanding the subject matter. He perceives that the students who do not pay attention do not usually understand the subject matter. Cathy points out that when everyone is involved in an activity, the whole class gets affected if one does not do his/her part. Juan liked the learning experience because everyone is working together while engaged in something different. Steve focuses on

the hands-on activity that all of them worked together. Nora speaks for everyone in class when she says that everyone liked the activity and also enjoyed the activity.

Having everyone involved, working together to do an activity, and enjoying such a learning experience are all characteristics of belongingness. This suggests that the affective quality of belongingness may influence situational interest when students work together in an activity. The teacher involving everyone in a lesson and requiring students to work together to achieve a learning goal creates a sense of belongingness, which is an affective quality of situational interest. Students wanting to do an activity together in a lesson blossom into situational interest of belongingness.

6.4 Positive Interactive Experiences

Four positive interactive experiences were related by the students to play a role in situational interest in Mary's history class. Fun, enjoyment, attention, and a desire to find out more about the subject matter were positive interactive experiences that were salient in the students' perception of situational interest. Each interactive experience and the corresponding number of students who related the interactive experience influenced their situational interest are presented in Table 6.3 (see Table 6.3).

Table 6.3: Situational Interest Interactive Features

Interactive Experiences	Number of Students Who Agree
Fun	16 out of 20
Enjoyment	15 out of 20
Attention	14 out of 17
Exploration Intent	14 out of 15

To understand if interactive features were present when students claimed to experience situational interest, the students were asked in the individual interviews to respond to the interactive experiences identified in the Open-ended Situational Interest Survey (Chen, Darst, and Pangrazi, 1999). The students were also asked in the interviews to point out interactive features beyond those that were identified by Chen, Darst, and Pangrazi (1999). This was done to investigate if interactive features played a role in situational interest.

6.4.1 Activity Features

When the students were asked in the individual interviews to “agree” or “disagree” if the learning sequence was fun, 16 out of 20 students answered “Agree” or “Yes” that the learning sequence was fun. One student said “Fun in away.” One student said “More fun than in the past.” One student said “No, not really,” and one student could not decide and provided no response.

In reflecting why it was fun, nine students juxtaposed how they usually learn in other classes to how they were learning in the learning sequence. This is represented by four students’ excerpts from the interviews:

Carole: Definitely (fun), because usually we sit there with notes and worksheets. Nobody wants to do it and nobody wants to go home and do it, and they don’t do it because it’s boring. (MIS)

John: More fun-- Just the fact that we don’t have to sit there and take notes all hour. We get to move around. We are not just sitting. I hate sitting. It is so boring to sit and take notes all hour. (MIS)

Matt: Oh, yeah! It’s been fun. Doing activities has been fun because it gives us a different environment. We do the same stuff in most classes—the normal stuff, like taking notes and simple activities, like answer questions on paper. But this six weeks has been fun, because we are doing stuff in class and we are learning stuff out of the routine. (MIS)

Sam: Fun because we are doing things we haven’t done before. (MIS)

Carole views the learning sequence as fun because her typical learning experience in classes is to sit and write notes and do worksheets. To Carole, such learning strategies are “boring.” She attributes the variable of boredom as the cause of student disengagement, both in the classroom as well as at home. This is illustrated when she says, “Nobody wants to do it and nobody wants to go home and do it, and they don’t do it because it is boring.” John also claims that the learning sequence was more fun because he does not have to “sit there and take notes all hour.” John shares in Carole’s perception that taking notes all hour is “so boring.” Further, John hates sitting, and the ability to move around in the learning sequence made it more fun. For Matt, the activities were fun because it gave the students a “different environment.” Matt observed that he was learning the subject matter out of his normal routine. Matt describes his routine in learning in the following way: “We do the same stuff in most classes—the normal stuff, like taking notes and simple activities like answer questions on paper.” Finally, Sam relates the learning sequence was fun because the students were doing things in lessons that they had never done before. All four excerpts relate the interactive experience of fun to learning that moved the students out of their normal routine. This may provide evidence that when students do not view learning as fun or when students view the learning experience as routine, situational interest is not being fostered by the design of the lesson.

Fun was not only related to breaking routine or relieving student boredom. When the transcripts of the student interviews were coded and compared, the number of student citations in the text attributed the interactive experience of *fun* to four features of the learning sequence: learning out of routine (n=18); active-learning (n=14); group work (n=9); and doing things differently (n=6). Regarding situational interest, the positive interactive experience of fun was found to be strongly related or interdependent on the activity features of active-learning, group

work, and doing things differently or novelty. Over the six week study, “fun” blossomed as an interactive experience that enhanced student situational interest.

6.4.2 Enjoyment Ingredients

When the students were asked if they agreed or disagreed that the learning sequence was enjoyable, 15 out of 20 students answered “Agree or Yes.” One student said “Sometimes.” One student said “Not really.” Three students said “About the same.”

Fifteen students related enjoyment as an interactive experience that played a role in their situational interest. The following selected student excerpts are representative of how enjoyment was experienced by the students:

Andrew: I have enjoyed history more than prior to the last 4 weeks because I had to work with my hands. (MIS)

Eddy: Personally, I like more hands-on group activities rather than independent work. It means more enjoyable learning. (MIS)

Lynn: It’s enjoyable. It makes it more interesting and you get all around better understanding because others say, ‘Well you can look at it this way too.’ You get other perspectives, and you learn it a couple more times, and you can remember it better. (MIS)

Tony: Yes (enjoyable). It isn’t all bookwork. You know, it’s not just take notes, define this and that. I did not like that when she would give us the page numbers and have us define what this means. It was hour’s worth of writing and copying out of the book. That gets old real fast too. (MIS)

Andrew and Eddy find it enjoyable to work with their hands. Andrew also sees that lessons are enjoyable when they are hands-on; however, for Eddy, the hands-on activity feature is more enjoyable when it occurs in a group. Lynn attributes her enjoyment to learning the perspectives of her peers. Lynn finds it interesting when her peers say, “Well, you can look at it this way too.” To Lynn, such different perspectives from her peers provide her with a better understanding of subject matter. Lynn further suggests when subject matter is related a “couple

of more times” by her peers that this helps her remember the subject matter better. Finally, Tony finds learning enjoyable when it isn’t all bookwork. Tony describes his learning experience before the study as “You know, it’s not just take notes, define this and that.” Tony expressed that he did not like in his prior learning experience when the teacher provided him with a page number and asked him to define what a term means on that page. Tony did not perceive using a textbook to define terms as enjoyable. This is supported when he says, “That gets old fast.” Enjoyment was a positive interactive variable related to the students’ situational interest in the learning sequence.

As with the representative excerpts, the students’ perceptions of their interactive experience of enjoyment were found to be related to three activity features: the hands-on or active learning feature (n=8), the discussion feature (n=6), and the novelty of breaking routine (n=5). Again, interactive experiences were associated with activity features when the students related characteristics of situational interest.

In the season of summer, enjoyment pervades as a blossom of situational interest.

6.4.3 Attention Traits

When asked if it was easier to pay attention in the learning sequence, 14 out of 17 students answered, “Agree” or “Yes.” Two students said, “About the same” One student said, “Not really.” Three students did not comment. Students’ perceptions of their interactive experience of attention are represented in the following excerpts:

Mike: Well, I like history so I am always interested in it, but the activities makes it where I pay attention more and that makes it better. (MIS)

Tom: Yes. I think when you find something a person really likes, it will hold their attention more. (MIS)

Chad: Yes. I like the ones that you have to pay attention to. You can’t help but listen to them (the lessons). They are fun. (MIS)

Cathy: Instead of ‘Oh, here’s another class we’re going to read out of the text,’ the next three weeks it really has grabbed my attention to want to go to that class, because I know it is going to be something fun! (MIS)

Mike relates liking the subject matter of history as “always” holding his interest; however, he states the activities in the learning sequence made him pay attention more and made the learning experience better for him. Tom suggests that when students find something they really like that it will hold their attention more. Chad, on the other hand, feels the interactive experience of fun in certain lessons required his attention, and because the lessons were fun, he couldn’t help but listen during these activities. Cathy also related attention to fun. She states because she understood that the lesson was going to be fun, it grabbed her attention to want to go to class. When Cathy views a learning experience as “Oh, here’s another class we’re going to read out of the text,” it does not motivate her attention to want to go to that class as much as when she knows the learning experience is going to be fun.

Mike, Tom, and Chad associate attention to the interactive experience of “liking”. The interactive experience of “liking” was cited by seven of the fourteen students as being related to their attention. Like Cathy and Chad, five of the fourteen students linked “fun” to their attention in a learning sequence. With the category of attention, the interactive experience of attention was found to be interdependent with the interactive experiences of liking and fun.

Situational interest blossoms “attention” when the students experience “liking” and “fun” in a lesson.

6.4.4 Exploration Intent Influences

When the students were asked in the interviews if the learning sequence made them want to find out more about the subject matter, 14 out of 15 students answered “Agree” or “Yes” that the activities fostered an intention to explore the further. Five students did not comment.

The following excerpts are representative of how the students in the interviews related a desire to explore the subject matter further to situational interest:

Mike: Some of them like the duck and cover (made him want to know more). I heard about it--how the kids would have to go under their desks. I didn't really see how that would help with the bombs, and the assembly line and the working conditions, I didn't know anything about how people fell in. (MIS)

Chad: The immigration policy, I wanted to know how they went through and decided which people could come through and which ones couldn't. The working conditions, I wanted to know what they did to make it safer for the workers. (MIS)

Phil: One of the questions that I wrote down was 'Why Prohibition didn't work?' And I wanted to go find out what happened to make it stop working. (MIS)

Tyler: Learning how things were back then and how Capone had gang wars, I kind of wanted to learn more about who was involved and how they ran it. It made me want to look stuff up and find out how it worked, I'd say the Capone activities made me curious the most. (MIS)

Ryan: The Capone movie was good. I wanted to learn more about that. I thought the movie ended early. I wish we could have done more on that. (MIS)

Mike in the "duck and cover" activity didn't really see how getting under a desk would help in the event of a nuclear bomb attack. In the working conditions activity, Mike wanted the details that explained how the workers fell into the vats. These details were not presented in the lessons. A deficiency of information also motivates Chad to want to know more about the topic. In the immigration activity, Chad wanted to have more information about the process that is used by the government in immigration to decide which people could come through and which ones couldn't. In the working conditions, he wanted to know what the meat packing industry did to make the working conditions safer for the workers. For both Mike and Chad, a desire to know more about the subject matter is incited because the teacher did not provide the information in the lesson. On the other hand, from a bottom-up activity, where the students constructed the

knowledge, Phil's desire to explore is motivated by a question he wrote down at the work station. "I wanted to go find out what happened to make it stop working." Here, Phil did not have the understanding of why prohibition stopped working, and he wanted to go find out. For Tyler, learning how things were back then and how Capone had gang wars made him want to learn more about who was involved and how they ran it. A sufficiency of information in the subject matter motivates a desire to "want to look things up and find out how it works." The sufficient information in the Capone movie was viewed by Ryan as "good" and it makes him wish that the learning sequence would've done more with that subject matter. In all of the fourteen students' claims that they wanted to know more about the topic, deficient or sufficient information about the subject matter played a role in a student's desire to explore, and it was a factor that influenced the students' situational interest.

The activity feature of sufficient or deficient information in the subject matter blossomed to play a role in a student's interactive experience of desiring to explore subject matter further.

In the summer season of this study, the light brings to focus the full blossoms of activity features, affective qualities, and positive interactive experiences that bloom into a construct of situational interest. Through collective students' perceptions, the landscape of lesson design to create situational interest becomes much more vivid. Mary and I were learning from the children that situational interest cannot be viewed as a standalone concept. It is a phenomenon that is brought to life in the classroom by considering many factors and features. Consider Table 6.4 that summarizes the interplay of the activity features, affective qualities, and the positive interactive experiences in creating situational interest in lesson design (see Table 6.4).

Table 6.4: Interdependent Dimensions in Situational Interest

Dimensions	Activity Features	Affective Qualities	Interactive Experience
Activity Features			
Novelty Traits	active learning, variety		different from routine
Group Work	Belongingness		fun , liking, easiness
Active Learning Positives			retain information, fun, keeping up
Information Characteristics	add charisma, vivid description, information with more points of view		
Discussion Consequences		belongingness— agreement or differed feelings	attention, fun
Games	group activities		fun, enjoyment
Affective Qualities			
Subject Matter Relevance		caring, relating, using, or seeing real world application	care, try harder, learn more
Sense of Belongingness	work together, have everyone involved	belongingness	enjoyment
Positive Interactive Experiences			
Fun	active, groups, different learning		fun, out of routine
Enjoyment	active, discussion, novelty		
Attention			liking, fun
Exploration Intent Influences	sufficient or deficient information		desire to explore subject matter

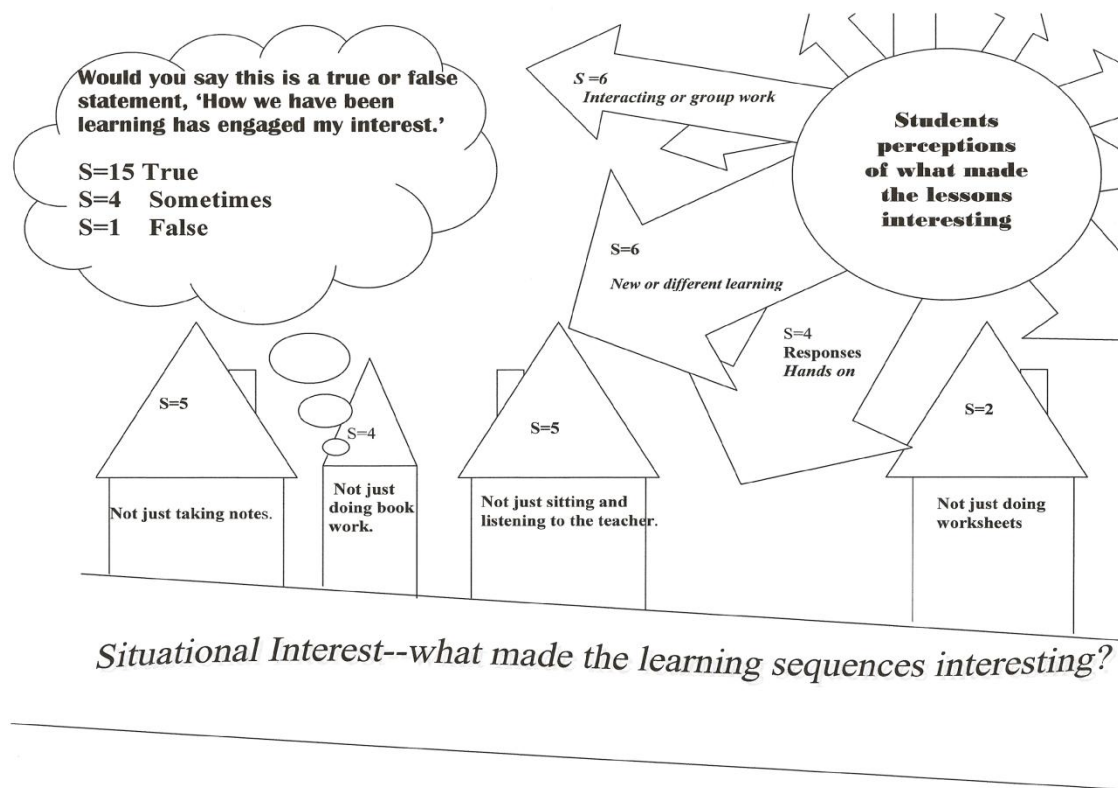
6.5 Situational interest Bloomed

To investigate if situational interest was experienced and “caught” and “held over the six week period, each student was surveyed throughout the interviews using the following two questions: first, to explore if the learning sequence engaged the student’s situational interest, the students were asked “Is this a true or false statement ‘How we have been learning has engaged my interest.’” Second, to examine if student situational interest was “caught” and “held,” the students were asked “Was your interest only ‘caught,’ or ‘caught and held’ or ‘not caught at all?’” The next two sections discuss the student’s responses to both of these questions.

6.5.1 Situational Features to Engage Interest

First this research wanted to understand if the students perceived the learning sequence to engage their interest. The students' answers regarding their interest engagement are represented in Figure 6.1 below:

Figure 6.1: Students Perceptions of Experiencing Situational Interest in the Lessons



Via the Out-the-Door Survey, I became aware that 15 students believed activities were created with the collative variables and the situational factors had “caught” their situational interest. Four believed that “sometimes” the activities in the learning sequences had incited their situational interest. One student claimed to not have his situational interest caught.

The following excerpts typify the citations that recurred in the transcript-text of the student interviews:

Nora: Yes, the learning has been a lot more interesting compared to the beginning of the year. It really has grabbed my interest to go to that class and learn what we are doing the next day. (MIS)

Tom: True. We got away from the usual note taking and we did more hands-on, that was pretty interesting and it caught our attention more. (MIS)

Sam: When we are talking about something I really don't find interesting, like when we are taking notes, I zone out I guess. I like it now and it is different than the other classes. It makes it more fun. (MIS)

Eddy: I think that is true. It has been a new learning experience. (MIS)

Chad: You got to work together and that was fun. (MIS)

Mike: I learned a lot in the past six weeks. There have been a lot of topics but I have had fun learning it. I know our class enjoyed it, and I found it interesting. (MIS)

Nora views her learning experience throughout the study as being a lot more interesting than the beginning of the year. For Nora, going to history now really grabs her interest. Nora's interest is also "grabbed" by discovering what the class will be doing the next day. Nora's situational interest may be due to the fact that the lessons were designed with the collative variables of "novelty" and "surprise", which make the learning experience unpredictable as compared to routine learning. For Tom, getting away from note-taking and doing more hands-on learning made his learning experience interesting. Tom relates that hands-on learning catches the students' attention more. Sam also likes the way he is learning now. When Sam had to take notes in history and listen to things that he didn't find interesting, he zoned out. Now, he sees the learning sequence as being different from his learning experience in other classes. For Sam, when learning is different from, it makes it more fun. Similarly, Eddy sees the learning sequence as being different. He says it is true that his interest was engaged because it was a new learning experience. Nora, Tom, and Sam depict that learning experiences that focus mainly on note-taking do not create situational interest for them. When the students provide reasoning as to why

the learning sequence engaged their interest, the characteristics of routine learning—not having to take notes, do book work, sit and listen to the teacher, or do work sheets (see Figure 6.1)—was found sixteen times in the interview-transcript for this question.

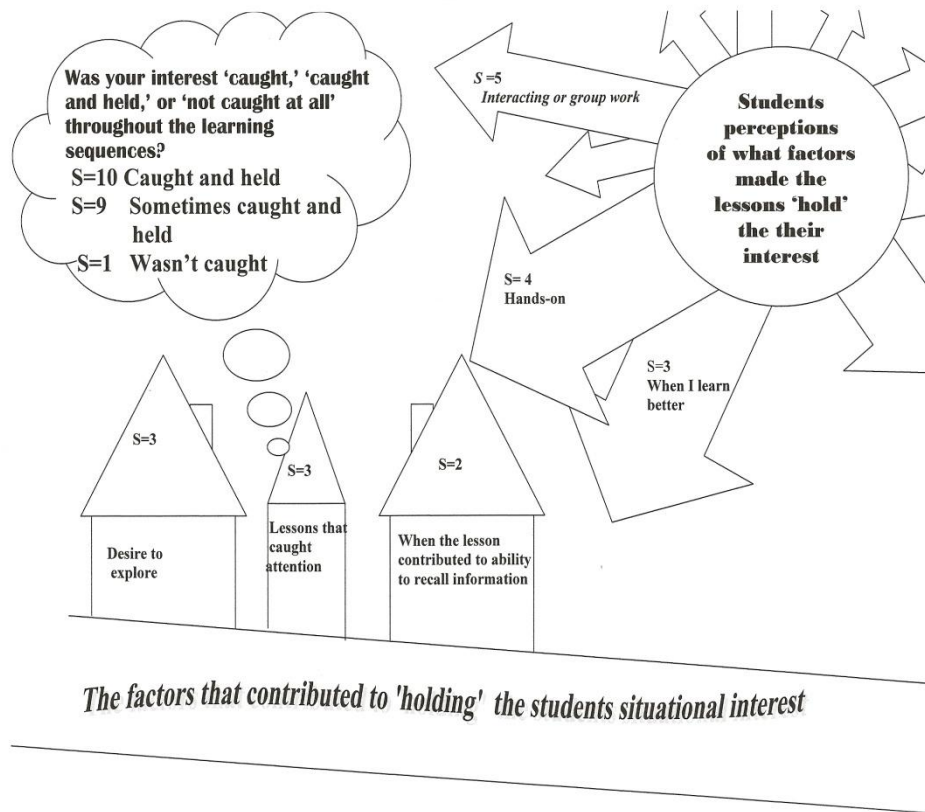
Chad points to the activity feature of “group work” and the interactive experience of “fun” as the characteristics of the learning sequence that engaged his situational interest. Mike, on the other hand, has learned a lot in the six weeks of the study, and although there were a lot of topics, he describes the learning as fun. Further, Mike speaks for his fellow students in the class when he says, “I know that everyone enjoyed it.” As with Tom, Chad, and Mike, sixteen times activity features—group work, new or novel learning, and hands-on learning (see Figure 6.1)—were cited in the text for engaging the students’ situational interest.

When 15 out of 20 students affirm that situational interest engaged them throughout the learning sequence, this may suggest that using collative variables and situational and individual factors to design learning sequences play a role in influencing situational interest in lessons.

6.5.2 Traits Capture and Sustain Situational Interest

Next, this research wanted to understand if the learning sequence “catches” and “holds” students situational interest. Ten of the 20 students interviewed stated their situational interest was “caught” and “held” throughout the study. Nine students indicated that specific activities “caught” and “held” their situational interest. One student’s situational interest was never “caught” or “held.” Figure 6.2 below represents the students’ experience of “catching” and “holding” situational interest.

Figure 6.2: Students Perceptions of “Catching” and “Holding” Situational Interest



Unlike in the previous question, the students related “catching” and “holding” their situational interest to not only “activity features” and “interactive experiences”, but also to “perceived cognitive benefits” the student associated with the learning experience. Consider the following student excerpts:

Tyler: Caught and held. When she talks about something that really catches our attention, we usually listen until she is done talking. (MIS)

Mike: Yes (caught and held). I think I understand more stuff when you actually get involved with the activities instead of someone just explaining it to you and you have to understand it on your own. (MIS)

Rianne: I'd say they are catching and holding because we are working together. (MIS)

Juan: I would say both (caught and held) because after I would keep thinking about it and then I would remember it more for tests. (MIS)

Nora: Caught and held, because I am learning stuff I have never learned before. (MIS)

Tony: Some catch and hold, but when I wanted to learn more, I think it held longer. (MIS)

John: Most of them pretty much held my interest. Once I learned it, I remembered it. (MIS)

For Tyler, “catching” and “holding” his interest is compared with catching and holding the class’ attention. This is supported when Tyler points to the class’ ability to listen until the teacher is done talking. Mike related a better understanding of the subject matter as a result of his involvement with the activities. When Mike is left to construct knowledge on his own from a teacher’s explanation of the subject matter, he understands better when he is involved with the subject matter. Rianne’s situational interest is “caught” and “held” when the class works together. For Juan, evidence that his situational interest was held was that he would continue thinking about the activities, and he would remember it better for tests. Nora’s interest is held because she is learning things she had never learned before. To Tony, when a lesson inspires you to want to learn more, situational interest is held longer. Like Juan, John relates remembering ability to holding situational interest.

As demonstrated in the representative student excerpts, activity features of the lessons, positive interactive experiences, and cognitive benefits contributed to catching and holding student situational interest. Activity features—group work, active learning or hands-on learning (see Figure 6.2)—were cited nine times in the text for this question. Interactive experiences—desire to explore and attention (see Figure 6.2)—were cited six times. Finally, cognitive benefits—learn better and enhanced recall—were cited five times. The data supported the

activity features of group work and active learning, the interactive experiences of desire to explore and attention, and the cognitive benefits of learning better and enhanced recall ability as contributing to capturing and sustaining the students' situational interest throughout the learning sequence.

6.6 Quantitative results: Increased Student Test Scores

To discover if there would be cognitive gains when integrating the collative variables and the situational factors into the learning sequences, Mary and I quantitatively explored if the students' test scores would be influenced by designing lessons to elicit situational interest. The test scores and the interpretation of the quantitative data is first discussed; then, a discussion of the students excerpts that reflect on how the learning sequence impacted student test scores is provided in the sections that follow the quantitative results.

6.6.1 Student Test Scores Improve

Mary and I wanted to explore if the lessons that were designed to contribute to the students' situational interest would influence students' test scores. Although the numeric value differed, all three tests were designed with an equal percentage of multiple choice questions and essay questions. The test on 3/13/07 was given to the students prior to the study, without the intervention of the collative variables and the situational factors, and would serve as the baseline. The primary means of instruction for the baseline test was primarily giving notes on the overhead and doing work sheets. The tests entered into Mary's computerized grade book on 4/23/07 and 5/17/07 directly related to the subject matter taught in the learning sequence during the six week study. Student sixteen was the student of junior standing in the study; however, it should be noted that her test scores increased dramatically. Student 15 was omitted from the data because it was a student who had dropped at the beginning of the semester. The change in the

overall mean of the students' test scores was significant. Consider the data generated in Mary's computerized grade book entry in Figure 6.3 below:

Figure 6.3: Quantitative Results of Student Test Scores

Name	ID	8	17	26
Term		3	4	4
Category		test	test	test
Date		3/13/0	4/23/0	5/17/07
Possible		84	100	100
Mean		68.77	79.13	84.90
<hr/>				
1.	9529	72	62	81
2.	3626	67	83	95
3.	10309	0	77	78
<hr/>				
4.	5320	75	86	74
5.	9941	82	88	96
6.	3632	84	90	80
<hr/>				
7.	14218	72	80	72
8.	9869	71	67	71
9.	4643	64	75	82
<hr/>				
10.	3651	80	95	94
11.	8088	73	69	81
12.	5248	50	85	79
<hr/>				
13.	3740	49	78	75
14.	11373	77	82	93
<hr/>				
16.	18208	73	94	90
17.	9341	62	86	85
18.	3709	80	79	96
<hr/>				
Name	ID	8	17	26
T~Fm		3	4	4
Category	test	test	test	
Date		3/13/07	4/23/07	5/17/07
Possible		84	100	100
Mean		68.77	79.13	84.90
<hr/>				
19.	8681	80	89	96
20.	3734	78	88	94
21.	9911	64	44	80
<hr/>				
22.	3739	78	66	88

Significant gains were made by the majority of the students on each of the tests. Eleven students increased both test scores during the study. Nine students had increased at least one test

score. The mean increased on the first test in the study by 10.36 percentage points. By the second test in the study, the mean increased by 16.13 percentage points from the baseline data. This may suggest that designing lessons with *collative variables* and *situational factors* to foster situational interest may have significant cognitive implications. It may also support the cognitive and affective claims that have been discerned through interest research. First, situational interest may play a role in what one chooses to learn and how well we learn information (Garner, 1992; Schraw & Lehman, 2001). Second, situational interest may impact the use of specific learning strategies and how attention is allocated (Hidi, 1990; Schraw & Lehman, 2001; Wade, 2001). Finally, situational interest may encourage deeper processing and emotional engagement in a task (Schraw & Lehman, 2001; Schraw, 1998; Schiefele.)

6.6.2 Cognitive Gains

The students in the interviews were asked, “Has how you have been learning over the past six weeks helped you on your tests? If so, how?” 18 students responded “Yes.” One student responded, “Sometimes,” and one student responded, “No.”

Three categories were salient in the data: the activities served as memory flags that aided recall on the test; the activities assisted in comprehension of the subject matter; and the activities resulted in greater attention. Each category is discussed in the following three sections:

6.6.2.1 Higher Recall Ability

Bill: The activities help us remember the lesson. If Mrs. B asks us a question about thing we were learning a couple of weeks ago, and then she relates it to the activity, we remember better, like the immigration policy or the Red Scare. I can think back to what we did that day and I’ll remember. (MIS)

Steve: Yes, because when I read something, I don’t remember it as well. When I see it, it helps me to remember it a lot longer. (MIS)

Sam: Yes. When we had a question on the test, the question kind of made you think back to the activity that we did and this brought out the different facts that we went over with it. (MIS)

Carole: I think so because I can recall things better from the activities because I am having fun with it, instead of just reading it out of our book. (MIS)

Phil: Yes. I would go back and remember key parts about the activity and it was just there. (MIS)

Bill suggests the learning sequence assisted students in test-taking because the activities helped the students remember the subject matter in the lesson. Bill refers to the teacher asking questions about subject material that had been covered two weeks earlier in a lesson. To trigger recall, the teacher related the subject matter to the activity. When the teacher made reference to the activity, Bill thought back to the activity they did that day, and he was able to remember the content. Steve doesn't remember subject matter well if he just reads the material. When Steve was able "to see" the subject matter in the activities, it helped him remember it a lot longer. Similar to Bill, Sam stated that test questions made him think about what he did in the activity and this created a memory of the different facts that were covered in class. Carole points out that the learning sequence was not just reading information out of a book. She associates her better recall on tests with the fun she had experienced in the activities. Ten students out of twenty related the learning sequence contributed to higher recall ability. This may suggest that lessons designed with variables to create situational interest may have a positive influence on student recall of subject matter.

6.6.2.2 Comprehension of Subject Matter

Lynn: It makes it in a way how we can understand it. It makes it easier to do it. (MIS)

Kyle: Yes. The last test we took on Al Capone, doing the activities helped me. The car thing helped me to understand, because if we just watched the

movie, I probably wouldn't have understood it. I wouldn't have been able to answer the questions. (MIS)

Juan: Yes. They helped me a lot on the test because I usually am average, but when I took the test this time around, I was an 'A' or 'B' and this is helping me a lot. (MIS)

Chad: Easier because it puts it into a simpler format to learn it. Before we would do a work sheet and we would just go through the book and look for the answer and not really understand it. (MIS)

Lynn says the learning sequence presented the subject matter in the lessons in a way that the students could understand it. To Lynn, the learning sequence made it easier to do what was being asked on the tests. Kyle cites the car race activity helped him to understand the material. He states that he may not have understood the material or have been able to answer the questions on the test if the class had just watched the movie. Juan states that the way he learned in the study helped him "a lot on the test." He notes that he was usually an average student when the classroom activities consisted more of note taking and work sheets. He further shares that his test grade had improved to an "A" or "B" during the study, and he attributes the learning experience to helping him improve his grades. Chad describes the subject matter as being "easier." He claims the activities put the subject matter in a simpler format for him to learn it. He did not really understand the material when the class did a work sheet or looked through the textbook for an answer. Five students related better comprehension of the subject matter as a result of the learning sequence. This may support the claim made in affect research that affect or possibly situational interest is directly proportional to cognition (Kaplan, 1986). As in the case of Juan, it may also support the claims made by Hidi and her colleagues when they argue that educational practice that would elicit situational interest would play an important contribution to the motivation of academically unmotivated children and could possibly elicit stimulation and challenge in the classroom (Hidi, 1990; Hidi & Harackiewicz, 2000).

6.6.2.3 Greater Attention

Tom: Yes, because I have been paying closer attention and listening to all of the information. (MIS)

Mike: (Both recall and attention) Yes. Since I was actually taking part in all of the activities, I actually remembered rather than just doing a worksheet, because I wasn't paying attention before. (MIS)

Tom states that the learning sequence helped him on his tests because he has been paying closer attention and listening “to all of the information.” Mike points to taking part in the activities for his attention and his recall ability. He observes that he was not paying attention when the students were asked to do worksheets. Although only two students related to experiencing greater attention in the learning sequence regarding this question, attention was a positive interactive experience that had emerged in the data (see Positive Interactive Experiences in this chapter). This may support the claims made by Patricia Wolfe (2001). In her book, *Brain matters*, Wolfe argues that current brain-based researchers have established that it is *meaning* and *emotion* that are the most critical factors that will sustain attention (2001). She further argues that the brain is biologically programmed to attend to strong emotional content. She cites Robert Sylvester who wrote *Celebration of Neurons* when he states “Emotion drives attention and attention drives learning” (in Wolfe, 2001; Sylvester, 1995).

In all three categories as to why the students perceived the learning sequence had improved their test scores, interdependence among certain activity features, affective qualities, and positive interactive experiences surfaced when the students related the factors to their situational interest. This may suggest that when the activity features, affective qualities, and interactive experiences are integrated with a high interdependence in a lesson to create situational interest that it may encourage better recall, greater student comprehension of subject matter, and more student attending behaviors.

In the summer season, Mary's pedagogical ground had warmed, and situational interest had flowered throughout the learning sequence. The blossoming allowed the children describe the variables that contributed to their situational interest in the learning sequence. The collative variables and situational and individual factors that grew slowly in the lessons in the season of spring have now blossomed with more of an understanding of situational interest. In this season, there was light shed on the specific activity features, affective qualities, and positive interactive features that were perceived to influence situational interest. Did a better understanding of the variables in lesson design that foster situational interests encourage a brisk change in Mary's pedagogical ground? This is answered in Chapter Seven—the fall season in this study.

6.7 Chapter Summary

Where in Chapter Five, situational interest was viewed from part to whole, Chapter Six embraced the conceptualization of situational interest from whole to part or from the students' perceptions of situational interest over all of the learning sequences. Where in Chapter Five the findings underwent a formative analysis of each of the learning sequences, Chapter Six focused on a summative analysis of the findings in the students' interviews over the learning sequences from a collective standpoint. Chapter Six also included the quantitative results from the students' test scores, and a discussion of the students' perceptions of how experiencing situational interest in the lessons influenced their performance on tests.

Chapter six provided a different lens by which to explore situational interest. It was the summer season in this study, where students' perceptions of their learning experience describe the rich blossoms of situational interest. The students shed light on the role of the activity features, the affective qualities, and the positive interactive experiences that had contributed to their situational interest in the learning sequence in the unit, *Life During the Twenties in the United States*. This was a unit specifically

designed with collative variables and situational and individual factors to elicit situational interest. Three findings were significant: first, situational interest was viewed by the students as a multidimensional and interdependent construct; second, the perception that situational interest was experienced throughout the lessons and was often caught and held; and third, the students related cognitive benefits in the lessons designed to foster situational interest.

The multidimensional and interdependent construct of situational interest was demonstrated by students' interview excerpts. Deci's (1992) person-activity interaction construct—activity features, mental dispositions, and interactive experiences—was supported with the following three categories that were salient in the findings of this study: activity features; affective qualities, and positive interactive experiences. Under activity features, five features emerged in the student interviews: *novelty traits*; *group work*; *active learning positives*; *information characteristics*; *discussion consequences*; and *games*. In the affective qualities; *relevance* and *belongingness* were found to play a role in situational interest. In the positive interactive experience category: *fun*, *enjoyment*, *attention*, and *exploration influences* were supported by the analysis of excerpts taken from the interviews. The findings in this section were arrived at through a “constant comparative” approach, and the findings support a holistic view of situational interest. This suggests that variables and factors must be viewed in the construct of situational interest as it relates to lesson design that fosters situational interest. It also may suggest interdependence amongst the pedagogy, the situational factors, the collative variables, and the positive interactive experience exists in such a construct. Finally, it may support the claims made by Deci's (1992) and Chen Darst, and Pangrazi (1999) that situational interest should be viewed as a multidimensional construct.

Next, the chapter discussed students' claims that they experienced situational interest in the learning sequences designed with the collative variables and situational factors. Further, in many of the lessons, students claimed that their situational interest was *caught* and *held*. Activity features of the lessons, positive interactive experiences, and cognitive benefits contributed to catching and holding student situational interest.

Finally, the study group's test scores significantly improved using the learning sequences designed to foster situational interest. Three categories emerged in the student interviews as to why the learning sequences helped the students on their tests: the activities designed to create situational interest enhanced student recall of information on the test; aided in comprehension of the subject matter; and commanded greater attention. The test scores and student perceptions may provide further evidence for students experiencing situational interest in lessons that recall is enhanced, cognition of subject matter is improved, attending behaviors are fostered, and unmotivated behavior is changed to motivated behavior.

As meaning is made of students' interviews in Chapter 6, the body of knowledge that lies in the students' voices fills the air with a more specific understanding of how learning sequence may be designed with interdependent factors that elicit situational interest.

CHAPTER SEVEN

MARY'S PEDAGOGY IS AS COLOR CHANGES IN THE FALL SEASON

7.1 Introduction

In the early weeks of fall, trees burst with color, launching a wave of red, yellow and orange, the woods offering a colorful background to the play of rich greens in the fields. With the fruit ripening, diffusing sweet smells this time of the year, the gathering season begins. Mary's pedagogical disposition and inclination may be likened to the fall season when the tree color change is vivid and the gathering of fruit is ready. Mary's conceptualization of situational interest has ripened, and the pedagogical landscape is vibrant with flamboyant colors of lesson design embedded with situational interest activities. Chapter Seven discusses Mary's pedagogical transformation, ripened understanding of situational interest, supported by evidence from two sources of data.

1. Digital pictures and verbatim transcripts of Mary's last two lessons (DPOL)
2. Verbatim transcripts of audio-recordings of My Summative Interview with Mary (MSIM)

By the end of the six-week long instruction on *Life During the Twenties in the United States*, Mary demonstrates that situational interest

1. Enhances lesson design
2. Influences positive learning experience
3. Motivates learning behaviors
4. "Catches" and "holds" personal interest

7.2 Situational Interest Enhances Lesson Design

Mary's ripened understanding of situational interest as a result of our collaborative work influences her disposition and inclination to designing lesson activities that focus on creating situational interest. For example, to introduce the students about the Great Depression, Mary gave each student a brown paper lunch bag. Some students received a lunch bag filled with wonderful food, whereas others received a lunch bag with just a Saltine cracker, representing their life during the Great Depression. Mary used the collative variable of *surprise* when she packed each student a lunch that represented his/her station in life during the Great Depression. The individual factor of *affect* was experienced when each student opened the lunch he/she was given.

Following the above motivational activity, Mary created a scavenger hunt made up of four work stations, three located in her classroom and one in the computer lab, across the hall. The four work stations are:

- a. Eleanor Roosevelt
- b. Alabama—Song of the South
- c. Riding the Rails Hobo Signs
- d. Web Quest on the Great Depression

The class was divided into four teams and students in each team worked together. The students in small groups of 4 or five moved from station to station. The students were expected to make meaning of each station in relation to an economic depression.

7.2.1 Station One: Eleanor Roosevelt

Eleanor Roosevelt's work was a great source of hope to the American people during the Great Depression. In a period when men dominated the political arena in this country, Eleanor's

political accomplishments reached out to both men and women during the Great Depression. To promote student understanding of how the peoples' lives in the Great Depression were impacted by her work, Mary immersed the students in the accomplishments of Mrs. Roosevelt to establish relevance, a variable of In station one, students were expected to do the following activity on Eleanor Roosevelt.

Eleanor Roosevelt

After reading the short biographical article about Eleanor Roosevelt, please create a timeline of her life. Include at least 15 events, some from her personal as well as her political life.

Read the letters that young people wrote to Eleanor Roosevelt during the Depression times. Write your own letter to her, describing how one of her accomplishments has affected your life.

Background Information:

Eleanor Roosevelt was born in New York City on October 11, 1884. Her parents were Elliott Roosevelt and Anna Hall Roosevelt, descendants of prominent Dutch ancestry. She was a niece of President Theodore Roosevelt. Eleanor's parents both died when she was very young, her mother when she was eight and her father when she was ten. She then lived with her grandmother, a strict disciplinarian, until she was fifteen. At this time she was sent to a boarding school in Europe. Eleanor was a bit of a backwoods girl, she was quite serious and full of fears and overly solemn for her young age. However, her schooling in Europe was like a new beginning for her. Here her personality began to show itself, she was "hooked" into thinking. Eleanor discovered the courage to voice her thoughts and opinions, traits that would be essential to her future accomplishments.

On March 17, 1905 Eleanor was married to Franklin Roosevelt, her fifth cousin once removed. This came following three years of courtship. Over the next ten years the Roosevelts had six children: one girl, and five boys, one of whom they lost in infancy to the flu.

Throughout the Roosevelts married life, Franklin was very involved in politics. He was in the New York Senate, a member of the Navy Department and President of the United States for four terms. Eleanor was also very influential in politics. She became involved in the League of Women Voters in 1920, and the Women's Trade Union League. In the League of Women Voters she played an important role in drafting bills and making policies.

In the summer of 1921 Franklin was stricken with polio (poliomyelitis). He was paralyzed from the waist down and would never walk without the aid of crutches or people again. Eleanor then began to work politically in his behalf. She joined the women's division of the New York State Democratic Party in 1924 and helped set up local Democratic clubs for women. She became a popular speaker and lecturer, overcoming her fear of public speaking. Along with her work in politics she also taught classes in literature, drama, and American history.

Eleanor was very important to the political success of her husband. Due to his illness, he used Eleanor many times as his "eyes and ears." He would send her on tours and inspections and then have her report back to him about the conditions. She became known as a first lady who cared about people and their problems. Franklin became President of the United States in 1932, during the Great Depression, and Eleanor continued to assist him and became very influential in his administration. She visited all over the country reporting on the people. She became a powerful advocate for the weak and disadvantaged in America. She was very outspoken in her quest for racial equality and in one famous incident resigned from the Daughters of the American Revolution in 1939 when the black singer Marian Anderson was denied the use of their facilities.

She was also instrumental in the creation of the National Youth Administration in 1934 which helped high school and college students stay in school. During World War II she visited American soldiers around the world, and promoted desegregation of the armed forces. She also acted as a good will ambassador and visited areas such as England, Australia, and the South Pacific Islands during 1943.

Franklin Roosevelt died in 1945 but Eleanor tried not to let this slow her down. If anything, she stayed busier in hopes of dealing with her loneliness. Harry Truman, the next president, had Eleanor serve as an American delegate at the first meeting of the United Nations General Assembly, she served for another seven years after this. She chaired the commission that drafted the Universal Declaration of Human Rights, which was passed on December 10, 1948.

Throughout the remainder of her life, Eleanor was involved in politics and bettering people's lives. She gave lectures, broadcasts, and wrote several articles, always fighting for the underdog. She died on November 7, 1962 after a severe stroke. Eleanor Roosevelt was a compassionate, loving, and motivated woman who spent her life serving the people of the world. She lived her life by this philosophy, do what you feel in your heart to be right - for you'll be criticized anyway. You'll be damned if you do and damned if you don't. Life was meant to be lived and curiosity must be kept alive. One must never for whatever reason, turn his back on life.

After reading the short biographical article about Eleanor Roosevelt, please create a timeline of her life. Include at least 15 events, some from her personal as well as her political life. Read the letters that young people wrote to Eleanor

Roosevelt during the Depression times. Write your own letter to her, describing how one of her accomplishments has affected your life. (DPOL, 5/02/07)

A small group of students worked collaboratively to create a time line of Eleanor Roosevelt's life. The students used *discussion*, a variable of situational interest, to complete the fifteen events of Eleanor Roosevelt's personal and political life by reading together the letters young people wrote her during the depression. Then, *relevance*, another variable of situational interest was used when Mary had the students each write his/her own letter that described how Eleanor's accomplishments impacted their lives.

When Mary was asked if she had observed anything salient about the letters the students had written, Mary made the following reflection:

The students were surprised at how her (Eleanor's) accomplishments impacted their lives. The girls in the class were especially interested and that came out in their letters.

To Mary, the students surprise at how their lives were influenced by the political actions of Eleanor Roosevelt was pronounced in the students' letters. She notes that the girls in the class had a special interest in this work station. If the females in the class perceive the accomplishments as more relevant to them than the males in the class, this may again support that relevance is a situational factor in the construct of situational interest in lesson design.

7.2.2 Station Two: Alabama--*Song of the South*

The *Song of the South* sung by the rock group depicting Alabama's depression was played in Station Two. In this station Mary uses the situational factors of movement, discussion, and social interaction, and the collative variable of ambiguity to engage the students' situational

interest. Interpreting *ambiguity* as an incomplete perception of a stimulus field, which leaves the subject with some uncertainties regarding its characteristics (Berlyne, 1963; 1965; 1966), Mary left out pieces of the song so that students in groups may listen to clues in the lyrics and fill in the blanks.

Song, song of the South

Sweet Potato Pie and shut my mouth Gone, gone with the wind

There ain't nobody looking back again

Cotton of the roadside, cotton in the ditch

We all picked the cotton but we never got _____

Daddy was a _____, a Southern _____

They oughta get a _____ to vote like that

Song, song of the South

Sweet potato _____ and I shut my mouth

Gone, _____

There ain't nobody _____ back again

Well, somebody told us _____ fell

But we were so _____ that we couldn't _____

Cotton was short and the weeds were _____

But Mr. Roosevelt's a gonna _____ us all

Well, Momma got sick and Daddy got _____

The county got the _____ and we moved to _____

Pappa got a job with the _____

He bought a _____ and then a _____

Song, ___ of the _____
 ___ potato pie and I shut my mouth
 _____, gone with the _____
 There _____nobody looking _____ again.

(DPOL, 05/02/07)

After filling in the blanks read the lyrics again. With the lyrics on back of the paper, answer the following question: *From a historical perspective, how did Alabama tell the story of the Depression? Reference specific sections of the song to support your answer.* (DPOL, 05/02/07)

Station Two demonstrates evidence of Mary designing the lesson activity on depression with the collative variables of *novelty* and *ambiguity* and the situational factors of *group work*, *discussion*, and *active learning*. Music as an activity feature characterizes *novelty* and the activity--fill-in-the-blanks in the song--points to *ambiguity*. As a group, the students hunted for the evidence in the song, then used the evidence to explain how the rock group told the story of the Great Depression by means of a Song. Students mined for information in a song and applied the information in a piece of writing.

In the following excerpt, Mary describes what was salient with the students at this work station:

This one was a hit. The music had them all engaged and interested. They weren't expecting a song to learn about the Depression. I can't say the quality of their work showed a drastic improvement, but I can say they all did it and enjoyed it. Getting them out of their desks is big.

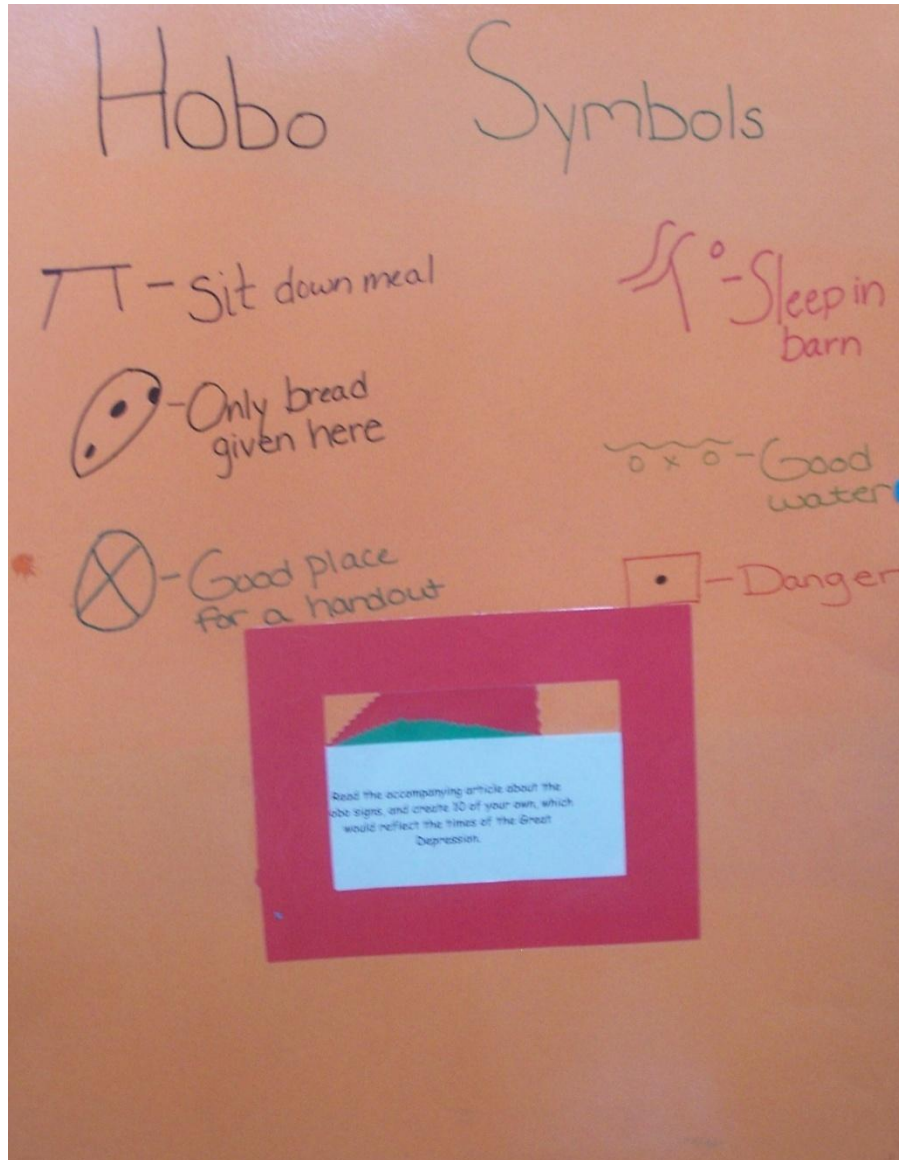
Mary associates the students' engagement and interest to the music and to the surprise and novelty of learning subject matter through a song. She views this work station as a "hit" with

the students. Although she did not see any outstanding improvement in the quality of the students' work, she notes that all of the students are participating and are experiencing the positive interaction of enjoyment. Mary shows a change in her pedagogical disposition toward creating lessons to elicit situational interest when she says, "Getting them out of their desks is big." In this lesson, the students are no longer sitting in rows, taking notes about American History. Mary is now using a song to teach subject matter.

7.2.3 Station Three: *Riding the Rails Hobo Signs*

In Station Three, the students were expected to read the article *Riding the Rails Hobo Signs* by Mark Lardas in the publication *Learning Through History: The Great Depression* (2004). In this work station, Mary uses the situational variables of *social interaction*, *discussion*, and *active learning* and the collative variables of *novelty* and *surprise*. To Mary, the students would be surprised that Hoboes during the Great Depression had created their own language with symbols to communicate. The background information is novel and vivid. After reading the article together, the students in their groups were asked to complete the following exercise:

Create 10 of your own Hobo Signs.



This work station asked the students to take on a hobo's mindset in a group and to create ten hobo symbols of their own. (DPOL, 05/02/07)

In the following excerpt, Mary describes what she perceives as salient about the students' situational interest at this work station.

I think the kids were interested in this because it was like their text-messaging. You know—the symbols. I think it made it relevant that they saw every generation has their own symbols. The artistic kids really liked this. The kids were having fun making up the symbols together.

Mary attributes the students' situational interest to the relevance of the students creating their own symbols in their text-messaging. She notes that the artistic students really liked drawing the hobo symbols. Mary also observed the students experienced the positive interactive feature of *fun* when they were creating the symbols together. Mary is now readily pointing to the situational variables in her lesson that confirm situational interest in students. Her cognition of the situational variables that create situational interest in her lesson supports a pedagogical change in Mary.

7.2.4 Station Four: Web Quest on the Great Depression

Work Station Four consisting of the Web Quest was set up in the computer lab. The students were expected to launch the following URL and follow the commands:

<http://www.davison.k12.mi.us/dhs/staff/hewitt14.htm>

In the Web Quest, students were asked to read two articles about the Great Depression. First the students were sent to read following article, The Great Depression and The New Deal, at the following website:

<http://www.bergen.org/AASST/Projects/depression>.

To check for comprehension, students answered the following four questions about each article: “List three causes of the Great Depression”; “What was the Impact of the Great Depression on the American People”; “How was the role of the American Government changed by the Great Depression”; and “Did the major programs of the New Deal successfully correct the economy.” Then, the students could select an article from Roosevelt’s fireside chats at: <http://www.mhrcc.org/fdr/fdr.html>. These articles would provide the situational factor of *sufficient background information*. After reading the articles and completing the questions, each student was asked in the Web Quest to take on a role of a person who lived during the Great

Depression. Then, the students wrote a journal article from the perspective of that person, using the material from the two articles to create context for the time period. This established the situational variable of *relevance*. Mary encouraged the students to use the roles provided in the lunch bags (see above) as a prompt for the journal article.

Since the students had never completed a Web Quest before in history class, the web quest was viewed by Mary as a *change* in the students' learning experience. To Mary, Station Four was a *novel* learning experience. To the researcher, the Web Quest was also a novel learning experience. I had never been exposed to a Web Quest. When Mary told me about this work station, I yelled, "Why didn't you ever tell me about this?" The Web Quest was viewed by Mary as the collative variable of *change*.

In the following excerpt, Mary reflected on what was salient in her observations about the Web Quest:

I think the Web Quest was interesting because the students were able to move from the class room to the computer lab and use a lesson on a computer rather than a textbook to answer the questions. They also liked it because they had never learned subject matter from a Web Quest before.

Mary points to the movement and the novelty of not learning subject matter from a Web Quest as contributing to the students' situational interest.

In summary, Mary's scavenger hunt consisted of four work stations that used the collative variables of *novelty*, *surprise*, *change*, and *ambiguity*. The work stations also were designed with the situational factors of *group work*, *discussion*, and *active learning*. The situational factor of *food* was used to introduce the learning sequence. The individual factors of *affect* and *relevance* were also included into her scavenger hunt. Mary's learning sequence was designed using the collative variables and the situational and individual factors. It was a departure from her lessons before the study that focused on notes and work sheets. This lesson

provides evidence that Mary's pedagogical inclination and disposition were being changed by a study that sought an understanding of how lessons could be designed to create situational interest. Mary reveals a better understanding of the value of creating lessons with situational interest. The change in Mary's pedagogical dispositions and inclinations is as the tree changes colors and ripening of fruit in the fall season.

7.3 Mary's Reflections on Her Pedagogical Actions

The Work Station activities (see above), through Mary's actions (designing and implementing) revealed how her pedagogical disposition and inclination changed to model lessons that incorporated situational interest. Mary's transformation in action is further supported by her reflections during the summative interview. Mary reveals that she is now looking forward to creating lessons that foster situational interest. Consider the following excerpt:

I am looking forward to next year, and doing some (activities) we didn't get to.
(MSIM, 05/07/09)

During our six-week long learning progression, we did not have time to complete all the lessons and activities that were planned. Referring to the time constraint, Mary shows enthusiasm for implementing the undone lessons in the following year.

Besides being enthusiastic in teaching, Mary reflects on the lessons that used collative variables. Consider the following excerpt.

The only way I thought any of them were too complex, the cartoons—the political cartoons when we took parts of it out and they had to fill it in. The *ambiguity* type things, not that it was too complex, but it was something new and they were not sure how to handle that. It was hard to figure out what was expected. If I were to do it again, then they would know. They would understand. When I do that kind of activity next year, I will have examples and show them, and I will have an activity where they have to fill things in so they know what to do. (MSIM, 05/09/07)

Mary and the researcher interpreted *ambiguity* as an incomplete perception of a stimulus field, which leaves the subject with some uncertainties regarding its characteristics (Berlyne, 1963; 1965; 1966). In the political cartoons (see Chapter Five’s lesson on advertising), the captions were removed. In the song on Alabama, the words were removed. This was viewed by the researcher and Mary as ambiguous because it created an incomplete stimulus field that created a sense of uncertainty. How the uncertainty of the meaning of the cartoons or the song would be resolved would be for the students to extrapolate and share evidentiary clues from the incomplete picture to resolve the uncertainty.

Mary believes the infusion of *ambiguity* using the fill-in-the-blank strategy caused confusion about the learning expected of students. To overcome the confusion that was deliberately created in fill-in the-blank song, Mary suggested that she would follow it up with lessons that will provide pertinent examples that lead students to achieve the learning goal and for a better understanding of the content. Mary would not be reflecting how she will incorporate *ambiguity* in the future lessons if her pedagogical disposition did not change.

Mary reflects back to the “duck and cover” activity and she reflects how a she could make a better relationship between the subject matter and the activities designed to elicit situational interest. The following excerpt depicts Mary’s concern about the activities and their relationship to the content taught. Consider the following excerpt:

By hooking the activity to the content, because sometimes it is a stretch to help them understand. Like the ‘duck and cover.’ that was definitely out there. But next year, I am looking forward to hooking them together better. (MSIM, 05/09/07)

Referring to the “duck and cover” activity where she failed to connect to the subject content (see Chapter 4 for details), Mary now points out the cognitive value of forging the relationship between the activity and the subject matter. Mary suggests that she intends to hook

the activity to the content next year. If Mary did not find drawing relationship between the activity and the content meaningful, she would have neither raised this issue nor considered the activity-content relation. Inclination to draw relationship between activity and content is an indication of change in Mary's pedagogical practice.

Based on her experience, Mary suggests to me an idea how to teach students teachers.

I now believe that you should go into your future college classroom with a Tupperware box and have a bunch of crap in it, glue sticks, cotton balls, masking tape, toothpicks, and this stuff, and ask the first person, "What is the lesson tomorrow?" and start pulling crap out of this box and ask them, "Okay, what can you do with this stuff to make that lesson more interesting to your class tomorrow?" So, they all need their own kit of crap, and I would go over it with each student teacher, and say to them, "Okay, once a week you have to pull out your box of stuff and come up with some ideas s to how you are going to use this stuff to establish relevance and engage the interest. (MSIM, 05/09/07)

The foregoing excerpt is another illustration of how Mary has changed her view of designing lessons to promote situational interest. Mary is now convinced that this research has value for future college classrooms when she states, "I now believe that you should go into your college classroom." Mary provides me with suggestions about how I should teach lesson design to create situational interest to teachers in a college classroom. She suggests that I illustrate it with a Tupperware box filled with unpredictable items that have no connection to each other. Then, I should require the young teachers to explain how he/she would use each of these items to create situational interest in the lesson that he/she will conduct tomorrow. Further, once a week, I should require each student teacher to bring in his/her own box and explain how he/she would use the unusual items to create *relevance* and *situational interest* in upcoming lessons. In suggesting how to teach future teachers, Mary indicates the importance of *relevance* and *situational interest* in lesson design. Like the fall season, Mary's pedagogical landscape manifests evidence of change.

7.4 Situational Interest Influences Positive Learning Experience

Teacher change is unveiled in Mary's perception that the learning sequence was a positive experience for her students.

I think we made it *fun* again for everybody, for me too. It was a lot *different*. And it made history *very pleasant* for all of us. If I were going to give specifics I would start it out, it made it *fun* again. The kids could give a lot of information as well. They might not be able to give me dates and specific facts, but they can give me the story of what has happened with the big picture. *I would say probably 95% of the kids could do that based on the activities and the test scores. It's not just the top 20% of the kids who are good at taking tests and all that.* (MSIM, 05/09/07)

Mary describes the learning sequence as making learning history *fun again* for both her and her students. She views the learning sequence as *novel* or *different*. She points out that making the lesson fun precedes giving "a lot of information." To Mary, students providing specific facts and dates have become less important. What is worthwhile is their story of the events constituting the "big picture". She observes that the activities designed to create situational interest contributed to 95% of the students being able to perform better on tests. She sees more students comprehending material rather than the top 20% who are good at test-taking. The fact that many students test scores improved mattered to Mary (see Chapter 6 for students' test scores).

Mary moves from fun, information, and test scores and focuses on student cognition. Consider what she states about cognition in the following excerpt.

I saw the interest level go up first, and it took awhile for the cognition to go up, because I wasn't sure they were understanding what they were learning yet. But once they started putting it together, like when you start to put a jigsaw puzzle together, you don't see the picture at first, but once they understood what they were learning, I saw the cognition go up! (MSIM, 05/09/07)

Mary attests that she observed students' "interest level go up first." She

acknowledges that “it took a while for the cognition to go up.” At the beginning of the learning sequence, Mary was not sure if the activities were contributing to better cognition; but as time went on, the pieces fell in place. Only when she witnessed the students were putting together what they had learned, like one would put the “jigsaw puzzle”, she was convinced of their understanding. Mary accepts that she did not see the “picture at first” referring to the intent of the lessons--creating situational interest for understanding. Seeing this intent, Mary recognized the students’ “cognition go up.” Mary relates the students’ ability to understand to their increased cognition. Mary believes the design of the learning sequence is directly related to the students increased cognition.

Student motivation was changing in Mary’s eyes. This is depicted when she says,

Well, by doing all of this stuff, it makes them want to learn it, and they want to do it, and they are learning while they are doing it.(MSIM, 05/09/07)

Mary points to the “doing” or student active learning as a feature that contributes to making the students “want to learn it.” She observes that active learning plays a role in students “learning” the material.

Based on Mary’s experience and testimonies presented in this chapter, one might argue that Mary’s transformed assumption is situational interest makes a positive impact on learning experience. While Mary pointed out important factors such as fun, learning more information, increased test score, rise in cognition, and wanting to learn contribute to a positive learning experience, other researchers have affirmed that situational interest influences transfer and comprehension (Nenninger, 1992) and recall (Wade, Schraw, Buxton, & Hayes, 1993). Garner (1992) and Schraw and Lehman (2001) noted that situation interest plays a role in what one chooses to learn and how well one learns information.

7.5 Situation Interest Motivates Learning Behaviors

Students' learning behaviors were changing in different aspects. Consider the following excerpt for student change with respect to motivation:

They were *asking more questions that were relevant to history* and of the times. They were asking more *questions going into detail*—about electricity, immigration. The students were *looking things up to find out different things*. They were *looking things up at home at night*. The things they came up with you could tell *they were really thinking about it*. (MSIM, 05/09/07)

Mary recounted that the situational interest embedded learning sequence contributed to changes in the students' learning behaviors. The “students were asking more questions relevant to history.” She notes that the students were *looking things up to find out different things*. Mary further observes that the students were *looking things up at home at night* and were *really thinking about the subject matter*. Asking more questions, looking things up to find out different things, and looking things up at home at night are all behaviors related to acting upon the desire to explore subject matter. The interactive nature of the learning sequence instilled in students a desire to explore. Students' learning behaviors may have been fostered by situational interest designed lessons.

While the last excerpt indicated Mary's reflection on students' change in learning behaviors toward the subject matter, the following excerpt is even more salient in terms of the influence of situational interest on student motivation.

The fact that the *kids who normally weren't interested, who were normally the last ones to walk through the door or the last ones to raise their hands are now the first ones*. They are *more interested now*, and a couple actually goes home and talks to their parents about our lessons. I saw a parent at Farmer Jack's and she said he comes home now and talks about history now, and he watches the History Channel. (MSIM, 05/09/07)

Mary observes that unmotivated students were motivated by the situational interest created by the design of the learning sequence. This is supported by the fact that the students

who were *the last ones to raise their hands or walk through the door are now the first ones to raise their hand or come through the door*. Mary provides two other examples of motivational changes in the learning dispositions of unmotivated students. First, a few students went home and reflected about the lessons with their parents. When students who never share their learning experience with their parents are now going home and discussing the learning in their history class.

The change of behavior of one unmotivated student was so notable that a parent stopped Mary at the grocery store. The behavior was so atypical for the student that the mother felt compelled to tell Mary that her son was now talking about history at home and watching the History Channel. Mary sees these examples as significant changes in her students' learning behaviors. Clearly, there is something in the learning sequence that has contributed to a change in students' learning behavior. Evidence points to the situational interest embedded learning sequence. Mary's reflection on motivation is accented by Hidi and her colleagues (2000). These authors argue that educational practice eliciting situational interest plays an important contribution to the motivation of academically unmotivated children (Hidi, 1990; Hidi & Harackiewicz, 2000).

7.6 Situational Interest “Catches and Holds” Personal Interest

Two categories were salient in Mary's perception of the “catching” and “holding” of situational interest in the learning sequence. First, Mary's perception of whether or not the learning sequence did “catch” and “hold” the students' situational interest; and second, the activity features, mental dispositions, and the interactive experiences that Mary believed was most important in a lesson to “catch” and “hold” the students' situational interest. Mary's perception of the “catching” and “holding” of situational interest will first be introduced in this

section. This will be followed by a discussion of variables and situational factors that Mary believes need to be integrated into lesson design to “catch” and “hold” the students’ situational interest.

Mary perceives that the learning sequence mostly *caught* and *held* the students’ situational interest. In the following excerpt, Mary provides reasoning why she believes the students’ interest is caught and held throughout the learning sequence.

If they were lagging back into a bored state, they wouldn’t come back in the next day and ask what we are going to do. I don’t know how to answer that. To me, it seems as their interest is being held, because they come in everyday and want to know what we are doing and they want to be involved in it. But in terms of whether their interest is being held the whole time, I don’t know.

(MSIM, 05/ 09/07)

Mary views the students’ wanting to know the next day about what they are going to do as an indicator of *holding* situational interest. If students were “lagging back in a bored state,” Mary realizes that they will not come back, curious to know what they will be doing on a particular day. One might speculate Mary’s statement suggests that the students were in a bored state in their learning experience prior to the study. Students coming every day, wanting to know what they will be doing, and indicating a desire to be involved in the learning process may be also considered as evidence of the students holding situational interest. Such motivated learning behaviors, according to Mary are indicators of situational interest being held in the learning sequence. Mary also expresses that she can’t be certain if situational interest is *held* the *whole time* during the activity. This may suggest that identifying the indicators of the holding power of an activity in terms of situational interest may be a topic of concern for future research.

Although Mary believed situational interest was held, she expresses concern that the holding of student situational interest may have been influenced by how she connected the subject matter to the activity. The aspect of connecting the activity to content is illustrated in the

following excerpt:

I do think all of them (activities) *held* at the time; but whether it held or when we hooked them (subject matter to the activity) together, might have been me. *I may have I lost them.* But the length of things made a difference and it is really important. It has to be just right. (MSIM, 05/ 09/ 07)

Mary expresses all learning activities may have held students' interest. However, she is unsure whether or not situational interest was held because of her neglect to connect subject matter to the activity. She even admits "I may have lost them, "because of not linking the activity to the subject matter. This suggests that Mary's thinking is that sufficiently "hooking" of the background information to the activity contributes to "holding" situational interest.

The length of time of an activity is important to situational interest being *held* according to Mary. She feels when the activity is too long the holding of situational interest is abated. Mary suggests that the length of time of expected student involvement must *be just right* and that it is a *really important* factor in the holding of situational interest. This may suggest that when activities are conducted too long and appear routine, the holding power of situational interest will be minimized because of habituation.

Mary provides the activities in the learning sequence that she views as holding the most interest and she explains what situational factors had the most holding power in the lessons.

Well, the *work stations*, I think *certain parts* really held their interest. Well, *certain games* that they made, like the Prohibition Football, or *certain aspects* of other ones that they really *enjoyed*. Part of the working conditions, *where we talked about the Jungle*, and the *relevance* and *hands-on* of the Model T—I would say those were *the best to hold their interest*. The students must also *get out of their seats* to hold their interest. (MSIM, 05/09/07)

Mary identifies the work stations, certain games, the *vivid information* in *The Jungle* activity, and the Model T activities *held* the most situational interest in the learning sequence.

Mary attributes the *holding* to the interactive experience of *enjoying* the activity, the individual

factor of *relevance*, and the situational factors of *hands-on* and *movement*. When Mary states, “I would say those are the best to hold their interest,” she suggests a multifaceted and interdependent nature of situational interest. The interdependence of the variables as suggested in Deci’s (1992) three dimensions of the person-activity construct is supported by Mary’s new beliefs about situational interest.

Mary identifies also the most important variables or situational or individual factors that needed to be included in lesson design to “catch” and “hold” the students’ situational interest.

Note the following excerpt.

Bringing in the more *interesting information*--bringing in the stuff about the Jungle, they really wanted to know about that. They have been bringing things in to me, and one of the boys came in and told me how he was telling his parents about the guest speaker and that he found out things he never knew, and it was more alive for them, so they are going to remember those things. *Doing all these different activities makes it more alive for them*. Having that man yesterday, what a nice way to end things out with these kids. (MSIM, 05/09/07)

Mary observes *interesting* information and *different* activities make the subject matter more alive for the students. The excerpt denotes that background information contributes to *catching* and *holding* situational interest when Mary suggests that *bringing in the more interesting information* makes the students want to know more about a subject. She first points to the vivid information provided about *The Jungle*. She also refers to the guest speaker addressing the students on (World War II). These learning events contribute to a desire for the students *to want to know more*. Pertinent information and different activities seem to make history more *alive* for the students, Mary reinforces. She draws also a relationship between situational interest and “recall” when she comments, “...so they are going to remember those things.” Mary’s remarks also points to the collative variable of *novelty* by making history more alive. Mary

focuses on certain aspects revealing that people attend to that which they deem interesting (Schank, 1979).

For Mary, *affect* is a factor in “catching” and “holding” situational interest. Consider the excerpt for affect.

I think *anytime that you can engage emotion. I am trying to think of more ways to do it that is appropriate for the kids* and not always use that shock value. I think there are things we can do here to get the kids emotionally involved, like these games. You can see here that they get emotionally involved because they like competition. (MSIM, 05/09/07)

Mary expresses that *emotion*, a personal factor, plays an important role in “catching” and “holding” situational interest in a lesson. Mary is *now* looking for more ways to integrate *emotion* into her lessons. Between the two collative variables (emotion and conceptual conflict), Mary is more comfortable in incorporating *emotion* than the *conceptual conflict*. Mary associates conceptual conflict with “shock value”. With respect to conceptual conflict, Mary reinforces, “I am trying to think of more appropriate ways to do it that is appropriate for the kids and not always use the shock value.” Mary perceives emotional involvement as “catching” and “holding” interest more than “shock value” in a lesson. Mary views competition as an *emotion* or an individual factor rather than an *interactive experience*. Because Mary perceives that students like the competition involved in games, she sees games as getting the students *emotionally involved*. To Mary, *emotion* and *games* are salient in “catching” and “holding” the students’ situational interest.

Moreover, Mary views fun and relevance to *catching* and *holding* situational interest as illustrated in the excerpts above and reinforced again in the following excerpt. Mary’s expansion of what constitutes catching and holding interest is characterized by the following excerpt:

Make it *real*. Make it *relevant to the kids*. Somehow, *use a lot of props and things other than textbooks*. I don’t think the *fun* part is the biggest part of this. I think

the biggest part is that the *kids feel that we are trying to give them as much information as possible and in as many ways as we can*, and the fact that we are really trying to teach them a lot and *get everyone* involved is a huge part of it. (MSIM)

Mary suggests relevance, an individual factor, is important in catching and holding situational interest. This is evident when Mary states, “Make it real. Make it relevant to the kids.” Mary also sees the individual factor of *belongingness or having everyone involved* as a huge part of catching and holding situational interest. Mary considers the interactive feature of *fun* as playing a major role in catching and holding situational interest, but not playing as much of a critical role as *giving the students as much information as possible in as many ways as you can*. Mary’s expressions are one of mentoring teachers-showing how to “catch” and “hold” situational interest in lesson design.

Mary also sees relevance to be important in “catching” and “holding” student situational interest.

I think *relevance is important. Relevance to the kids is huge*. Well, anything that seems relevant and interesting to you, you are going to *understand it*. It is going to become *important in your life*. When they began to understand it, they became like sponges. They wanted to *learn more and more!* (MSIM, 05/09/07)

This is supported when she states, “Relevance to the kids is huge.” To Mary, when information is relevant and interesting to students that it promotes better understanding. Mary associates relevance in lessons to making information important *to the student’s life*. Mary observed that relevance encouraged the students to *want to learn more*.

7.7 Chapter Summary

This chapter explored the colorful changes in Mary that came alive in her classroom as a result of better understanding of situational interest. Using the fall season, the changes in Mary’s pedagogical disposition of and inclination toward practice were metaphorically portrayed in this

chapter. In the first section of this chapter, Mary's change in pedagogical practice is supported by the lesson created by her in the sixth week of the study without any mentorship by me. Living through the winter, spring, and summer, Mary portrays changes in pedagogical approach to lesson design as she faces the fall.

The change in her pedagogical disposition and inclination was defended by four new pedagogical beliefs about situational interest: (a) enhances lesson design, (b) influences positive learning experience, (c) motivates learning behaviors, and (d) catches and holds personal interest. Clearly, these pedagogical dispositions and inclinations are different from her wintry experience (see Chapter 4). For example, Mary uses the textbook to frame her entire lesson in the beginning of the study. A better understanding of situational interest pervades the fall pedagogical landscape. The fall in this old neighborhood abounds with pedagogical change. Mary is now convinced that situational interest is birthed in a lesson by many interdependent variables that nurture each other. Although Mary views some factors as more important contributors to "catching" and "holding" situational interest, to design lessons that elicit situational interest, a teacher must use a holistic composition that is made up of a medley of variables.

CHAPTER EIGHT

CONCLUSIONS, DISCUSSION, AND IMPLICATIONS

8.1 Introduction

Using “four seasons” as a metaphor, the study demonstrated how situational interest grew in Mary’s tenth grade social studies classroom over a six week period. The purpose of this study was to document, analyze, and interpret how a teacher (Mary) and her students in a tenth grade history class experienced situational interest when the teacher incorporated Berlyne’s collative variables (1963, 1965, 1966) to foster perturbation or disturbance—*surprise, complexity, ambiguity, novelty, change, and indistinctness*—in the design and implementation of a learning sequence. *Collative variables* were integrated with *situational factors* developed by Bergin (1999) to understand the impact on student situational interest in a social studies class.

This research attempted to study Berlyne’s *collative variables* and Bergin’s *situational factors* (external variables) in a learning sequence would catch/trigger and hold situational interest. Because each collative property of a stimulus disturbs the steady state of expectancy, the goal was to integrate *collative variables* and *situational factors* into lessons to understand if student self-determined action would be aroused and/or if intrinsic motivation would be experienced when situational interest was claimed to be experienced in each of the lessons. Research has found that when external variables such as the *collative variables* are combined with the external *situational factors* that intrinsic motivation is experienced (Hidi & Berndorff, 1998; Mitchell, 1993; Bergin, 1999). More importantly to this study, the integration between external and internal factors is highly representative of eliciting the intrinsic motivation found to be a characteristic of situational interest (Bergin, 1999; Hidi & Berndorff, 1998; Mitchell, 1993).

In-depth reflective interviews with Mary, video documentary of Mary's classroom, planning and "think-aloud sessions" with Mary, and researcher-teacher collaborative analysis of video segments were used to explore Mary's understanding of situational interest as it related to lesson design. Consensograms, student "out-the-door" surveys, student interviews were used to explore students' experience of situational interest. All recordings were transcribed verbatim and were color-coded, analyzed, and interpreted to understand teacher and student experiences of situational interest. In this chapter, conclusions for each research question are stated clearly and discussed; key issues based on evidence are presented; implications of this research are outlined; and recommendations for future research are proffered.

8.2 Research Questions and Conclusions

Four research questions were framed to explore participants' situational interest in lesson design through the use of the season metaphor. Several sub-questions were also used to enhance the grounding of the findings based on evidence derived from data. The questions are restated and the conclusions are made in the following sub-sections.

8.2.1 Research Question One: Winter—The Bare Beginning

The first research question, metaphorically representing winter, focused on Mary's initial pedagogical disposition and inclination to designing lessons to elicit situational interest.

What are Mary's pedagogical dispositions and inclinations of how a learning sequence on *Politics and Life in the Roaring Twenties* should be designed and implemented with a focus on integrating Berlyne's collative variables and Bergin's situational factors to engage situational interest?

As the bare beginnings of winter, Mary was barely open to the idea of situational interest infused into her lesson design. Her initial lack of commitment to design lessons to foster

situational interest was evident in the early stages of the study. This lack of commitment to use Berlyne’s collative variables and Bergin’s situational factors in lesson design is illustrated in Mary’s statement: “So, does this mean we have to cater to them by coming up here and *entertaining them with our own little TV show for history class?*” Mary’s question equated lesson design that used Berlyne’s collative variables and Bergin’s situational factors as “entertaining” students with “our own little TV show for history class” rather than engaging them in learning. The pattern of disinclination to use *collative variables* and *situational factors* to design lessons was prevalent in most of her excerpts at the beginning of the study.

8.2.2 Research Question Two: Spring—Budding and Pedagogical Blossom

The second research question metaphorically depicted the spring season. Its focus was how Mary’s understanding of situational interest grew.

How did the teacher’s understanding of situational interest grow as a result of the specially designed lesson sequence that incorporated Berlyne’s collative variables and Bergin’s situational factors?

Mary’s understanding of situational interest grew slowly over the learning sequence. In the first week of the study, Mary was slow to trust the enjoyment the students were experiencing during the specially designed lessons: “I am not sure if it is because of what they are doing or because they are *sitting next to each other are able to talk*. I am talking about the ones that are up here. These three or four—I had to get on them because *they were talking*. *It’s the nature of the beast* when you are doing that kind of stuff.” As Mary watches the replay of the video, she is concerned with the three or four students who were off task and talking rather than focusing on the seventeen students who are not off task and are demonstrating enjoyment in the lesson. Mary’s lack of trust is evident when she suggests that it may be the students sitting next to each

other and talking caused the enjoyment rather than the lessons designed with collative variables and situational factors. The above excerpt is one of many excerpts that contributed to a pattern of Mary being slow to trust designing lessons with situational variables to engage situational interest; however, this pattern was soon to change.

Over the next four weeks, Mary's understanding of the situational variables that elicited student situational interest in lesson design grew steadily. Mary went from a lack of trust in such lesson design to a pedagogical disposition that was more inclined to design lessons to foster student situational interest. This is supported by Mary's willingness to attend to the *activity features*, the *affective qualities*, and the *positive interactive experiences* that she viewed as being strongly related to creating student situational interest in the lessons.

For instance, week-by-week, Mary grew in her understanding of the *activity features* fostering student situational interest: "I would say the *movement*. With these kids, the *most important piece is the movement*." Mary points to moving students out of their seats as the most important *activity feature* in engaging student situational interest. As illustrated in Mary's observation of the importance of *movement*, the pattern of Mary's increased awareness of the *activity features* that fostered situational interest was growing more and more as observed in the transcripts.

Mary's instructional understanding of creating lessons to engage situational interest was also confirmed by her increasing awareness of *affective qualities* associated with the students' experience of situational interest. Consider how Mary pointed to the characteristics of *belongingness* as an *affective quality* that engaged the students' situational interest: "With the exception of one or two kids, *has really become family*." When Mary stated the study group was becoming "family," she had observed a sense of *belongingness* among the students because

family indicates commonality. The affective like *trait of belongingness* and *relevance* also emerged as qualities associated with student situational interest.

Mary's pedagogical inclination to create lessons to foster situational interest was perhaps most influenced by her understanding of the *positive interactive experiences* that she had observed, particularly the cognitive benefits (see Chapter Five). Consider how Mary described participation in her experience as confirming evidence of student situational interest as revealed in the following excerpt, "Well, based on the fact that they *all seem to be working*, but also when I checked their papers, they *all seem to understand it well and get a lot out of it*. Not just based on this observation, but also on what was turned in as well." Here, Mary supported the positive interactive experience of student *engagement* when she said "they all seem to be working together." Mary's awareness of the role that *activity features*, the *affective qualities*, and the *positive interactive experiences* played in the experience of student situational interest favored her growth in her understanding of situational interest in lesson design.

8.2.3 Research Question Three: Summer—Full Pedagogical Blossom

The third research question metaphorically depicted the summer in this study and is the light the students shed on situational interest.

What light did the students shed on how situational interest was conceptualized in the implementation of the specially designed lesson sequence?

The students' experience of situational interest based on the lessons in the learning sequence was also used to answer the following sub-questions:

- 1) Does a learning sequence designed with *collative variables* and the

Situational factors significantly increase 10th grade students situational interest in the content of the lesson?

- 2) How did the students conceptualize situational interest?
- 3) Was there a significant difference in the students test scores when they are taught using *collative variables* and the *situational factors* to design the learning sequence as compared/contrasted to a different practice of teaching?

As Mary's pedagogical ground warmed to designing lessons to elicit situational interest, the students' experiences of situational interest is understood from a collective lens over the landscape of the learning sequence. Situational interest variables came into full blossom. As Mary's pedagogical willingness became increasingly open to using situational variables to design and implement lessons throughout the learning sequence, the students were able to reflect over *all* of the activities designed to create situational interest. Four research claims blossomed in this season.

The first claim is that the students experienced situational interest in the learning sequence as a multidimensional and an interdependent construct that consisted of *activity features*, *affective qualities*, and *positive interactive experiences* (see Chapter Six). The following six activity features were salient in the student interviews as being strongly related to student situational interest: (1) novelty traits, (2) group work, (3) active learning positives, (4) information characteristics, (5) discussion consequences, and (6) games (see Chapter Six). An example of such interdependence of the activity features novelty and group work is illustrated by the following excerpt: "New-fashioned! Because we are *doing activities* and we are *doing things in groups*, trying to *work together to get the activity done*. Before, in other classes, you just get the worksheet, do it and turn it in." For Chad, the learning sequence engaged his situational

interest because of the following four situational variables: the lessons were “new-fashioned;” the students were doing activities; the students were working in groups, and the students working together to get the activities done. Chad did not point to one situational variable as eliciting his situational interest. He pointed to several situational variables that acted interdependently to create his situational interest. As with the excerpt that illustrated Chad’s view, the pattern of interdependence among the situational interest variables was prevalent in most of the excerpts that illustrated students’ responses.

Not only *activity features* influenced situational interest but *affective qualities* also played a role in student situational interest. The pattern in student interviews denoted *subject matter relevance* as the most significant affective quality that fostered student situational interest. For example, Joe’s excerpt which stated succinctly the role of subject matter relevance in student situational interest: “Relevance keeps my interest. If it is *not relevant*, I *don’t really want to know*.” Joe wants to learn personally relevant subject matter so that it sustains his interest. *Characteristics of belongingness* emerged as the second salient affective quality that engaged students’ situational interest, which is illustrated by Mike’s statement: “Probably because everybody does it. We all get it more. I don’t like it when just a few do it, and the people that aren’t paying attention don’t usually get it.” Mike’s situational interest is experienced because “everybody does” the activity. Note also Mike’s point about the *ability to comprehend subject matter* is dependent on *everyone doing the activity*. As illustrated in Mike’s view, the pattern of *characteristics of belongingness* and the interdependence among the situational interest variables was prevalent in most students’ interviews.

Students related four *positive interactive experiences* that played a role in student situational interest. They were *fun*, *enjoyment*, *attention*, and a *desire to find out more about the*

subject matter. Consider how Lynn’s situational interest was fostered by the *enjoyment* she had experienced in an activity: “It’s *enjoyable*. It makes it *more interesting*, and you get all around *better understanding* because others say, ‘Well you can look at it this way too.’ You get other perspectives, and you learn it a couple more times, and you can *remember it better*.” Lynn’s situational interest is experienced because of her ability to discern “other perspectives” to “have a better understanding” and “remember it better.” The positive interactive experience of *better comprehension* and the situational factor of *discussion* made the learning experience *enjoyable* for Lynn. The pattern of positive interactive experiences and interdependence among the situational interest variables was a pattern observed in most student interview excerpts. Such consistency in a pattern may suggest that lesson design that elicits situational interest is a multidimensional and interdependent construct.

The second claim from the third research question is that *activity features* of the lessons, *positive interactive experiences* in the lessons, and the *positive interactive experiences* from the *cognitive benefits* of the lessons were found to catch/trigger and maintain situational interest (see Chapter Six). Mike’s excerpt demonstrated how the positive experience of *comprehension of subject matter* and *being physically involved* in the activities in the learning sequence caught/triggered and held his situational interest.”Yes (caught and held). I think I *understand more* stuff when you actually *get involved* with the activities instead of *someone just explaining* it to you and you have to *understand* it on *your own*.” Mike points to a self “involved with the activities” for “understanding more stuff.” He also notes that it was a learning environment where he did not have to understand subject matter on his own. To Mike, all of these situational variables contributed to his situational interest being caught and held. As with the excerpt that

illustrated Mike's view, the pattern of interdependence among the situational interest variables was also prevalent in most students' interviews excerpts.

The third claim was that students had better test scores during the learning sequence as compared/contrasted to the transmission model that Mary had previously used in her classroom. The students attributed their increased performance on tests to the specially designed sequence of lessons in the learning sequence (see Chapter Six). Consider Juan's comment in the student interviews: "Yes. They (the lessons) helped me a lot on the test because I usually am average, but when I took the test this time around, I was an 'A' or 'B' and this is *helping me* a lot." Juan considered himself an "average" student; however, his test scores improved to an "A" or "B" during the study. He states that the lessons that engaged his situational interest "helped him a lot." Like Juan, the other students' scores had also improved on the two tests that were taken by the students during the specially designed learning sequence designed.

Finally, the students claimed that *higher recall ability, better comprehension of the subject matter, and greater attention* were positive cognitive interactive experiences that helped to improve their test scores. Consider how Carole responded regarding having better recall ability on tests: "I think so because I can *recall things better* from the activities because I am having *fun* with it, instead of *just reading* it out of our book." Carole had *better recall* on the tests because she had *fun* with the activities in the learning sequence. Carole's recall on tests was not as good when she was "just reading" subject matter out of her textbook. The patterns of *activity features and positive interactive experiences* in the lessons interrelates to *higher recall ability, better comprehension of the subject matter, and greater attention* were situational variables obvious in most student excerpts (see Chapter Six).

8.2.4 Research Question Four: Fall—Variation in Pedagogical Color

The research question metaphorically depicted fall in the study. Its focus was on Mary's pedagogical transformation.

How did the investigation of situational interest change Mary's perceptions of how to design lessons to engage situational interest?

The season of fall illustrates Mary's pedagogical inclination and disposition changing colors in her awareness of designing lessons with variables that blossom situational interest. In this season, Mary's conceptualization of situational interest was ripened, and the pedagogical landscape was vibrant with her pedagogical transformation. Mary was transformed by her experience of designing lessons to elicit situational interest, and her pedagogical transformation was supported by four changes in her pedagogical beliefs.

First, Mary became convinced that situational interest enhanced lesson design. Mary not only was designing her lesson with *collative variables* and *situational factors* in the final week of the study but she was looking forward to designing activities in the subsequent year. The following excerpt illustrates that Mary was convinced situational interest variables enhanced lesson design: "I am *looking forward* to next year, and *doing some (activities)* we didn't get to." If Mary did not feel the situational variables enhanced her lesson design, she would not be looking forward to doing some of the activities in the following year. Unlike the beginning of the study, where Mary compared using Berlyne's collative variables and Bergin's situational factors to "entertaining students with our own little TV show" (see Chapter Four), Mary is now "looking forward" to designing the activities "we didn't get to" to engage student situational interest. Mary now "looking forward" to designing lessons to engage situational interest also supports a

change in her pedagogical inclination and disposition to design lessons to engage student situational interest.

Second, implementing the specially designed learning sequence helped to facilitate Mary's understanding that student situational interest engaged *positive learning experiences*. Consider how Mary viewed the learning sequence designed with *collative variables* and *situational factors* in the following excerpt from her summative interview:

I think we made it *fun* again for everybody, for me too. It was a lot *different*. And it made history *very pleasant* for all of us. If I were going to give specifics I would start it out, it made it *fun* again. The kids could give a lot of information as well. They might not be able to give me dates and specific facts, *but they can give me the story* of what has happened with the big picture.

Mary pointed “fun” being a positive interactive experience. She pointed out the *novelty* of the lesson design made it pleasant for everyone. She noted the lesson sequence made “history very pleasant for all of us.” She observed the students could “give a lot of information” about the subject matter.

Third, Mary believed that lessons designed with *collative variables* and *situational factors* to elicit situational interest changed students' learning behaviors and motivated disengaged students (see Chapter Seven). Illustrated are two of Mary's observations pointing to *changed learning behaviors*: “They were asking more questions that were relevant to history and of the times. They were asking more *questions going into detail*—about electricity, immigration. The students *were looking things up to find out different things*. They were *looking things up at home at night*. The things they came up with you could tell *they were really thinking about it*.” Mary characterizes students' learning behaviors in the following manner: *students asking more*

history-related questions, students asking more detailed questions, students looking things up to find out different things, and students really thinking about it (the subject matter). These were learning behaviors Mary did not observe when she solely used the transmission model of instruction to teach history. Mary also observed that the specially designed learning sequence motivated the academically unmotivated. As illustrated in the following excerpt: “The fact that *the kids who normally weren’t interested, who were normally the last ones to walk through the door or the last ones to raise their hands are now the first ones.* They are *more interested now,* and a couple actually goes home and talks to their parents about our lessons.” Mary describes the motivation of the academically unmotivated students in the study group as now being the first ones *through the door* and the *first ones to raise their hands*. Such engagement of disengaged students as a result of the experience of situational interest designed in a learning sequence is consistent with the research claims made by Hidi and Harackiewicz (2000) Mary is no longer questioning if lesson design to engage situational interest is just an “extra nuance” that interferes with accomplishing curricular mandates (see Chapter Four), a change in Mary’s pedagogical inclination and disposition.

Finally, Mary viewed the specially designed learning sequence with *collative variables* and *situational factors* as “catching” and “holding” personal interest (see Chapter Seven): “If *they were lagging back into a bored state, they wouldn’t come back in the next day and ask what we are going to do.* I don’t know how to answer that. To me, *it seems as their interest is being held,* because *they come in everyday and want to know what we are doing and they want to be involved in it.*” Mary sees confirming evidence of situational interest “holding” personal interest in the learning sequence. Students were coming in day-after-day *wanting to know what the class would be doing* and *wanting to be involved.* Mary stated these learning behaviors are evidence

that students are not *lagging back into a bored state*. If Mary's pedagogical disposition had not changed, she would not admit that her students were in a "bored state" prior to the learning sequence. Students' situational interest being caught and held in Mary's view was a pattern developed using many excerpts. Mary's conceptualization of lessons specially designed to engage situational interest had ripened. Mary was transformed from being doubtful of the value of designing lessons to engage student situational interest to trusting it because of her classroom experience with implementing a history lesson sequence.

8.3 Discussion of Lessons Learned

Three major lessons were learned in this study. They are as follows:

1. Teacher pedagogical openness
2. Dilemmas with Affect-designed lessons
3. Changes in students' learning behaviors

8.3.1 Teacher Pedagogical Openness

Discussed in Chapter Four is Mary's disinclination to design lessons to implement lesson designed to create situational interest. Mentoring Mary to create lessons with *collative variables* and *situational factors* to elicit situational interest required Mary to change her pedagogical practice, beliefs, and attitudes. These elements according to Griffin (1983) should not have been neglected in the design of this research because they worked against Mary's understanding of the value designing lessons to create situational interest.

Guskey (2002) points to two schools of thought as to when in the mentoring process or in the professional development experience, teacher change for instructional innovation may occur. The first school of thought is based on Lewin's (1935) work in which the mentorship assumes that the educator is convinced the instructional innovation itself will lead to change in teacher

behavior and instructional practice. In Lewin's focus-on-the-innovation model, planning sessions are conducted with the educator to garner teacher commitment, acceptance, and zeal for the innovation. This was the focus in my study with Mary. It was my belief that the sessions would immediately change her pedagogical inclination and practice. However, the early planning sessions did not influence Mary, which I was unaware. Classroom video-data of Mary's implementation of the first few lessons quickly dispelled my assumption that Mary would quickly add perturbations and situational variables to her lessons in the manner this study originally sought to investigate. This was best illustrated when I encouraged Mary to add more conceptual conflict with the collative variables and Mary resisted by stating the following reasoning: "They didn't know what to make of it; yet, I think if I had done an example first, and they saw how the ambiguity was supposed to be, they would have had an easier time with it. The ambiguity can help, and help with the teaching part, but not as far as the learning part. I think too much of it, causes too much confusion." Mary's indication that ambiguity causes too much confusion should have been a red flag to suggest that she did not value the role of ambiguity in learning. I should have paid more attention to mentoring Mary rather than the lesson design innovation. This study was slow to recognize that teacher change is a difficult process (Guskey, 2000). Thus, Mary's openness to pedagogical innovation became an issue when mentoring Mary to design lessons that incorporate situational interest.

I should have adopted Guskey's (2000) second school of thought about mentorship that points to teacher change being an "experientially-based" process predicated on a teacher's belief that an instructional practice works because it has been witnessed. Experiencing innovation changes the teacher's attitude and practice (Guskey, 2002, pp. 384-385). Guskey further argues only when a teacher is convinced that the instructional innovation played a role in helping

students attain desired learning outcomes will the innovation be practiced and repeated. Guskey (2002) argues for a switch from the focus-on-the innovation model to mentoring the teacher “experientially” to best support teacher change. Mary’s change in pedagogical practice occurred through her observations of the positive changes in student learning behaviors and the affective interactive experiences, which were as a consequence of learning sequence designed to engage situational interest. Mary’s change did not occur because I attempted to convince her of the desirability of designing lessons to create situational interest in the early planning stages of the study. Mary changed because she came to believe that the intervention developed desirable student outcomes: “Well, by doing all of this stuff, it makes *them want to learn it*, and they *want to do it*, and they *are all learning* while they do it” (summative interview). Mary is convinced of the desired student outcomes which students are wanting to learn subject matter and wanting to do the activities. Mary’s change supports Guskey’s (2002) second school of thought which is “experientially-based.” The dilemmas that must be identified and negotiated in an “experientially-based” process will be discussed in the next section. Now, we need to understand the obstacles that influenced Mary’s pedagogical openness.

In the planning sessions of designing lessons that would create situational interest three pedagogical dispositions challenged Mary’s openness: (1) *degree of work*, (2) *appropriateness to high school students’ age and maturity*, and (3) *ease of work*. Mary’s openness to creating lessons to elicit situational interest was influenced by her concern regarding the amount of work that would be involved. In the early planning stages of the study, Mary equates the integration of situational interest variables—surprise, novelty, change, ambiguity, complexity, and indistinctness—with brain-based learning. She points out that brain-based learning is *too much work* and that it is easier to put information in front of high school students. This concern for the

amount of work was later supported in the planning session, when Mary pointed out that dividing time between family affairs and her commitment to teaching had affected her practice. Mary's concern for the amount of time is consistent with Guskey's (2002) claim that any pedagogical change that enhances a teacher's competence and contributes to student learning outcomes requires extra work and ambition.

The appropriateness of designing lessons to create situational interest in high schools students was another concern that challenged Mary's openness. Mary likened novel learning and integrating situational factors into a lesson to creating our "own little TV show." She wondered if designing lessons to create situational interest was to *entertain* students rather than provide a legitimate learning experience to evoke situational interest: "So, does this mean we have to cater to them by coming up here with our own little TV show for history class?" Mary's remarks reflect anxiety and resistance for the appropriateness of lessons for high school students. Appropriateness of lesson was a key factor that played a role in her pedagogical openness. Lessons designed with situational variables threatened Mary's current practice. Her questioning the appropriateness was an example of her hesitation to implement such a lesson design. Pedagogical change can foster anxiety and be threatening to a teacher's current practice (Guskey, 2002). Changing practice poses a pedagogical risk, and teachers are hesitant in adopting new practices unless they are able to make them work (Lortie, 1975).

Ease of work was another pedagogical consideration obstacle to Mary's openness. In the early planning session, Mary questioned whether or not adding affect relevance that the collative variables and the situational factors would distract from meeting the large number of curriculum mandates. Mary viewed the collative variables of surprise, ambiguity, novelty, change, complexity and indistinctness as "extra nuance" that confuse the state of mind of students. She

stated that such variables would distract from the state's expectation of students in mastering the numerous curricular concepts. Mary's concern for the amount of effort a teacher has to put in for an instructional innovation to work has been foretold (Guskey, 2002). He claims that the requirements of implementing an instructional innovation adds to a teacher's workload and requires extra energy and extra work.

Designing lessons to create situational interest with the *collative variables* and *situational factors* also required the researcher to mentor Mary in a new pedagogical paradigm. This meant asking Mary to implement lessons that have a new design. Shulman (2004) suggests that for a teacher to adopt new practices, he or she must be "ready," "willing," and "able." These elements significantly influenced Mary's implementation of the learning sequence that creates situational interest. Mary was not *ready*, *willing*, and *able* to implement the innovation because of her approach to lesson design, teacher preparation coursework, and bilingual teaching experience.

How Mary learned history in high school and her pedagogical orientation played a role in her receptivity to mentorship and her implementation of lessons that were designed to create situational interest. Mary described that the routine of her high school history class consisted of covering one section of the chapter each day. After the students had taken notes, students answered the questions at the end of each section and chapter. At the end of each week, she remarked there was a test, and a movie followed. When I asked Mary to detail her approach to lesson design, Mary described the need to go over each section, explain what the section was about, and expect students to take notes so the students will understand the subject matter. Mary's pedagogical orientation was much like how Mary was taught. Mary's high school learning experience and her pedagogical orientation toward instruction was routine and repetitive—instructional characteristics manifested in schools (Goodlad, 1984; Shernoff,

Schneider, & Csikszentmihalyi, 1999). Changing instructional practice without evidence of positive instructional outcomes influenced Mary's ability and willingness to create and implement lesson design that use collative variables and situational factors fostering situational interest (Guskey, 2000). Mary's apprehension in her willingness is best understood in the excerpt from the Think Aloud Session after the Immigration Policy activity (see Chapter Five): "I think it (the activity) enhances the notes. I am not going to say they do not need notes." Mary had learned through note taking, and she was not convinced of lessons that did not use note taking as the best instructional strategy for student understanding. This was an obstacle to Mary's willingness and her ability to implement lessons with note taking as a result of student interest and shared understanding.

Mary's teacher preparation coursework in college did not provide background support to mentoring Mary in a new paradigm of lesson design that creates situational interest (as discussed in Chapter Four). In Mary's undergraduate experience, Mary was "pretty much on her own" in lesson design. Referring to lesson design, Mary stated that her Masters of the Art of Teaching program "assumed that we already knew." Mary's best experience in lesson design was with an instructor in her Middle Level Education Masters, who suggested that adolescents need "movement and excitement." Mary's experience in lesson design is an example of how colleges are preparing teachers. Research claims suggest traditional, linear, scripted lessons are still the most common form of lesson design planning that is taught in pre-service teacher education programs throughout the country (Oakes, Hunter-Quartz, Ryan, & Lipton, 2000).

Finally, Mary's bilingual teaching experience with her Spanish certification influenced her unwillingness to create lessons with a high degree of perturbation (conceptual conflict) in collative variables lesson design. Mary's bilingual background and certification in Spanish made

her more aware of the reading comprehension needs of students in the general population. Because of this sensitivity to the comprehension needs of students in the general population, Mary was uncomfortable using the collative variables to disturb students' thinking with a high degree of perturbation. She believed a high degree of conceptual conflict would confuse student understanding. As the lessons progressed, Mary was more comfortable with integrating situational factors and affective variables in her lessons as compared to the collative variables. This is best illustrated in Mary's summative interview (see Chapter Seven): "I think anytime that you can *engage emotion*. I am trying to think of more ways to do it that is appropriate for the kids and not always use that *shock value*." Mary correlated disturbing a student's thinking with collative variables as "shock value." Mary's awareness of students' needs because of her teaching experience with her bilingual and Spanish certification students made her more receptive to integrating affective and situational factors in lessons compared to the collative variables. Mary's willingness to implement lessons that engage situational interest was influenced by her teaching experience in bilingual education and Spanish certification. This suggests the prior views of teachers must be explored, considered, and incorporated while bringing about knowledge development and classroom practice (e.g., Hollingsworth, 1989; Richardson, Anders, Tidwell, & Lloyd, 1991).

The pedagogical inclination and disposition of teachers cannot be left out or ignored in research that promotes the construct of situational interest in lesson design; because it is these inclinations and dispositions that motivate classroom practices. If teachers are not inclined to create lessons that foster the affect of situational interest, they will not interrupt the routine and repetitive nature of learning tasks with "interest-enhancing strategies" to make boring tasks more engaging (Sansone, Wiebe, & Morgan, 1999). Because of the role that acceptance and

commitment plays in lesson design with situational interest, researchers must plan for educational interventions that are sensitive to pedagogical openness and teacher change.

8.3.2 Dilemmas with Affect Lesson Design

Dilemmas in Mary's learning environment surfaced as unanticipated barriers in designing lessons with Berlyne's collative variables and Bergin's situational factors to create situational interest in Mary's classroom. A learning environment refers to all aspects of the school environment of Mary's learners that influences the achievement of learning goals within a subject area (de Kock, Slegers, Voeten, 2004). Windschitl (2002) argues that framing progressive practice in a learning environment requires the negotiation of four dilemmas: conceptual, pedagogical, cultural, and political. Although Windschitl's (2002) research focused on the tensions that challenge the implementation of constructivism in a learning environment, such dilemmas were also found to be consistent with creating and implementing lesson design that attempted to elicit the affective variable of situational interest.

The researcher had provided a booklet to Mary, as described in Chapter Four, illustrating how teachers could design higher level perturbations to create disequilibrium in the students' thinking; however, the booklet had little meaning to Mary. This is illustrated when Mary reacts to the booklet after she had read through it. Mary stated, "Are you going to have student teachers reading this? Because this is going to be, I don't know... *too deep* in terms of what people are doing—the connections they are trying to make in terms of their actual lessons." Mary felt the content of the booklet was too deep for what teachers were doing in their classrooms. Although Mary expressed that she did not find the content of the booklet as being relevant to connections teachers are trying to make in their lessons, the researcher did not facilitate her concern with a conceptual understanding of the theoretical pertinence of the booklet. Further, the design of my

research study did not properly enable me to negotiate with Mary about her understanding of the research-based professional development strategies that may have better assisted Mary in moving Piaget's theory to instructional practice. As a result, the initial goals of the study were limited by the researcher's oversight in implementing facilitation of strategies that would have assisted Mary in using the *collative variables* to link Piaget's theory to practice.

With respect to creating cognitive conflict in lesson design, the researcher should have reminded Mary about the foundation courses she might have taken that elaborated Piaget's theory of disequilibrium. In this regard, Windschitl (2002) suggests the success of progressive practice in a classroom lies in the "degree to which the individual teacher understands the concept" (p. 138). In this study, the researcher overlooked the significance of equipping Mary with the necessary tools to achieve the initial goals of this research. Mary needed to understand the role conceptual conflict, a collative variable, and *situational factors* play in eliciting situational interest. She also needed professional development in practicing the integration of collative variables and situational factors into lessons.

The researcher's oversight about Mary's dilemma of conceptual understanding was better understood only at the end of the study because of her reaction to Piaget's theory of disequilibrium in the summative interview. Mary was not willing to translate Piaget's theory of disequilibrium to her pedagogical practice. Mary felt disturbing students' equilibrium threatened the students' feeling of safety in a learning experience. This was illustrated in the summative interview with Mary when I asked her about the role of Piaget's theory in lesson design: "I don't know. I think I am a person that feels equilibrium is really unimportant. I think feeling safe is more important, I guess. Possibly, that theory isn't very important to me." Because the theory of disequilibrium was not important to Mary, she was more comfortable implementing situational

and individual factors into her lessons than she was with the collative variables. This may be why so many lessons used “novelty” and “surprise” compared to complexity and indistinctness.

Lesson design with *collative variables* and *situational factors* also required a shift in how Mary thought about her instruction. The pedagogical dilemma in this study was the need for Mary to depart from a transmission model of teaching history to creating lessons that elicited situational interest with *collative variables* and *situational factors* (Windschitl, 2002). Prior to the study, standardized tests had inclined Mary’s approach to instruction to follow the traditional epistemology of objectivism, where substantial facts were transmitted directly to her students. Consider how Mary described her approach to instruction: “Every time when I teach something here, I check the (state-mandated) curriculum. I go through things and make sure I am covering the things I need to be covering. Then, I decide what kind of activities that I want to have the kids doing after I give them the information.” Mary explained that she must make sure that what she teaches must be aligned with the content expectations of the state-mandated curriculum. Administrators, board members, and parents in Mary’s learning environment expected Mary’s teaching performance to result in student success on state standardized tests. This meant that Mary was accountable for her students’ cognition of the substantial facts required in the state-mandated curriculum. Because of this performance expectation and accountability, Mary was taking a risk by abandoning the transmission model of instruction that she had used in her lessons. With the transmission model, Mary was able to demonstrate to her learning community that her lessons were aligned to the content standards and benchmarks and the necessary knowledge was delivered to her students.

Mary’s responsibility for students’ performance on high stake tests made it difficult for Mary to feel comfortable in adopting and implementing an innovative approach in her lesson

design. Mary had to first come to trust that lessons designed to elicit the affective variable of situational interest would result in better student understanding: “I saw the interest level go up first, and it took awhile for the cognition to go up, because I wasn’t sure they were understanding what they were learning yet.” Mary had to be assured that her students “were understanding” the history content. However, the researcher was more focused on exploring how adding collative variables and situational factors to subject matter influenced situational interest. The researcher was not sensitive as to how Mary’s pedagogical shift to designing lessons to elicit situational interest would impact her accountability for student performance on standardized tests. Mary’s need to satisfy her accountability with this new approach to lesson design was a pedagogical dilemma that the researcher needed to be cognizant.

Further, this researcher did not procure an understanding of the claims in the literature as to how to best mentor a change in a classroom’s culture. To incorporate lesson design that would create situational interest in students, Mary’s classroom culture had to be transformed. According to Windschitl (2002), the cultural perspective of a classroom is the students shared understanding with the teacher of what constitutes a lesson and how students should participate in the learning experience. Mary’s classroom culture was much like the culture that is dominant in classrooms in most schools (Oakes, Hunter-Quartz, Ryan, & Lipton, 2000). Prior to the study, for example, Mary guided her lessons by having the students take notes from the material placed on the overhead. She reinforced this content with textbook materials to provide uniform conceptualization of the knowledge being delivered. Then, she would check for understanding. In Mary’s classroom, the role of the students had been passive rather than active. This study encouraged Mary to get students out of their seats and to change her view about how subject matter is experienced. Although this study required Mary to “re-culture” (Windschitl, 2002) her

classroom, the researcher did not provide Mary with professional development that would foster her understanding of the research claims that support new participation structures that elicit situational interest. Rather, the researcher expected Mary to change the culture of her classroom without such understanding. This lack of adequate professional development on the researcher's part, creating confusion in Mary's classroom culture is illustrated in the following excerpt from the summative interview with Mary: "I think they *are enjoying* what we are doing, but they are also *asking me questions* like, 'Should I outline the chapter?'—you know, more traditional stuff. I think of Ryan and I asked him, 'Do you want to?' And he said, '*Well I just figured we would have to for the test,*' and I said, 'Do you think you picked up everything for the chapter by going around the workstations?' He said, 'Yes, but I thought we should read the chapter.'" Mary and Ryan do not seem to share an understanding of what constituted the work station lesson and the degree of student participation that was expected. This confusion may have been avoided if Mary had been mentored more appropriately in how classroom cultures need to change to foster situational interest.

Finally, the researcher did not attempt to negotiate the political dilemmas in Mary's learning environment. Mary's political dilemmas were the resistance rooted in the institutional norms that were supported by the stakeholders in Mary's learning environment. Other than gaining permission from the school district, the teacher, the parents, and the students to conduct the study, little effort was made by this researcher to gain support from these stakeholders for this approach to lesson design. I did not share evidenced-based literature on situational interest were provided to the school community. Because the subject matter was controlled by the state mandated curriculum, Mary had little autonomy in choosing what she wanted to teach. This study expected Mary to implement a new approach to instruction around a textbook that

emphasized basic skills and board policy that outlined a direct instruction approach to subject matter. I did not provide any evidence to Mary how lessons that engage situational interest would help her meet the state content standards and benchmarks and better prepare them for the high stakes testing for college admission. The lack of the researcher's foresight to provide such professional development to the political stakeholders placed that responsibility on Mary. She was left to her own resources to convince the students and parents that lesson design that promotes situational interest was productive and desirable. With Mary not yet convinced of the merits of this instructional approach, it placed Mary in an unfair political position with the stakeholders in her learning community. This study needed to demonstrate keen sensitivity to such dilemmas.

There are few studies on situational interest that characterize affect, knowledge, and value (Hidi & Harackiewicz, 2000; Hidi & Reninger, 2006). This may be due to the dilemmas that must be overcome before the study begins. This research failed to adequately mediate the four dilemmas in Mary's learning environment: conceptual, pedagogical, cultural, and political. As a result, this inquiry to understand situational interest in lesson design was limited by the researcher's lack of preparedness to overcome these dilemmas. If a new norm in lesson design that fosters the affect of situational interest is to be realized in classrooms, the design of the research must be sensitive to the importance of mediating such dilemmas.

8.3.3 Changes in Students' Learning Behaviors

Perhaps the most unanticipated finding of this research was the impact of lessons designed with *collative variables* and *situational factors* had on student learning behaviors. The specially designed learning sequence encouraged five learning behaviors (which are discussed in Chapters Five, Six and Seven): *greater student engagement, unmotivated students becoming*

motivated, greater attention to learning activities, better comprehension of subject matter, and higher attention and recall.

Throughout the learning sequence, Mary consistently pointed out greater student engagement as confirming evidence of situational interest: in the Model T activity, “Everybody is *engaged*... As I said, every single kid is doing it. No one is even thinking about not doing it.” As Mary reviewed the videotape, she observes that not only every student is participating but there was not one student thinking about not participating. Although the Model T activity fostered the greatest student engagement, Mary consistently cited greater student engagement than she had experienced prior to this study (see Chapter Five).

As discussed in Chapter Five and Chapter Seven, Mary regularly pointed to unmotivated students becoming motivated by the lesson as confirming evidence of student situational interest. Note how Mary describes a student who had been failing her class prior to the learning sequence: “This one right here in the black shirt in the middle—he is the one who never does anything and somebody even said to me ‘Even he is doing it!’” This excerpt supports that a student who never had any motivation to participate is now participating. Student motivation in the study supports the argument that positive affect associated with the experience of student situational interest motivates the academically disengaged (Hidi & Harackiewicz, 2000; Hidi & Renninger, 2006).

The transcripts pertaining to Mary and her students, *greater attention to lesson activities, better student comprehension, and higher recall ability* emerged as learning behaviors experienced as a result of situational interest lessons. Tom talked about his interest as follows: “Yes (I am interested), because I have been *paying closer attention and listening* to all of the information,” “listening to all of the information,” and “paying closer attention.” For Tom, situational interest of the lesson fostered two new learning behaviors: As was the case with Tom,

the other students consistently related having greater attention in the learning sequence (see Chapter Six). Hidi (1990), Schraw & Lehman (2001), and Wade (2001) also claim that situational interest may impact the use of specific learning strategies and how attention is allocated.

Better comprehension of subject matter was also experienced in lessons designed with *collative variables* and *situational factors*. This is supported not only by the significant gains in the student test scores during the study but also in testimony replete in the transcripts (see Chapters Six and Seven). For example, Lynn illustrates better understanding of the subject matter when she states: “It makes it *in a way how we can understand it*. It makes it easier to do it.” Lynn statement illustrates that the learning sequence designed with the collative variables and situational factors made the instruction ‘in a way’ that she could understand it. The lessons also made it easier for Lynn to comprehend the subject matter. In line with Lynn’s observation, better comprehension of subject matter was experienced by many students (see Chapter Six). This claim is also consistent with Garner (1992) and Schraw and Lehman (2001) who both argue situational interest may play a role in what one chooses to learn and how well one learns information.

Finally, *higher recall ability* was a salient learning behavior evident in the transcripts. For example, Juan’s remark in the student interviews portrays his ability to better recall subject matter: “I would say both (caught and held) because after I would *keep thinking about it* and then I *would remember it* more for tests.” Juan sees his situational interest as being caught and held because he would *keep thinking* about the subject matter so that he may remember it *more* for the tests. The foregoing excerpt indicates that the collative variables and situational factors in the lessons promoted more frequent thinking about the subject matter, leading to higher recall.

Juan's observation of higher recall was also shared by his classmates (see Chapter Six). Student higher recall is also observed by Renninger and Wozniak (1985) who point out that individual interest contribute to greater recall and recognition.

8.4 Educational Implications

This study attempted to understand if there would be a relationship between a specially designed learning sequence with Berlyne's collative variables and Bergin's situational factors and fostering student situational interest. The findings of this study have two valuable implications on engaging student situational interest. They are pedagogy of history and teacher professional development.

8.4.1 Pedagogy of History

This research adds to situational interest theory based on the pedagogy of history. Mitchell (1993) contributed to situational interest theory from mathematics education. This author stated that group work, puzzles, and computer games caught and triggered situational interest in math lessons. Chen, Darst, and Pangrazi (1999) contributed to situational interest theory based on their study in physical education. According to these authors, situational interest was found to be a multidimensional construct that consists of the following dimensions: novelty, challenge, attention, instant enjoyment, and exploration intent. Like Mitchell (1993) and Chen, Darst and Pangrazi (1999) contributed to situational interest theory based in their respective fields, this research contributes to situational interest theory based on the pedagogy of history. This study implies that a history learning sequence designed with Berlyne's collative variables and Bergin's situational factors catches, triggers, and holds student situational interest when *activity features, affective qualities, and positive interactive experiences* are interdependent.

This study argues when two history teachers (i.e., the classroom teacher and the researcher) designed and implemented a learning sequence with collative variables and situational factors, a more specific multidimensional construct of situational interest emerged compared to the work of Deci (1992) or in the research of Chen, Darst, and Pangrazi (1999). Deci (1992) claims situational interest is a multidimensional construct with the following components: (a) the person-activity component, (b) the experiential component, and (c) the dispositional component. Although the findings of my research agree with Deci (1992) situational interest should not be viewed as a standalone concept because interactive categories lead a person to a psychological state of being interested in an activity. This study found specific activity features, affective qualities, and positive interactive experiences are interdependently lead to student situational interest. Deci (1992), Chen, Darst, and Pangrazi (1999) found in physical education classes that *instant enjoyment* and *exploration intention* to be the highest dimensions correlated to student situational interest followed by *attention demand*, *novelty*, and *challenge*. This study also found instant enjoyment, exploration intent, attention, and novelty to play a role in leading to situational interest; however, this research argues that many more situational variables need to be considered as playing a role in the situational interest construct. Even more important to history teachers, the evidence of this study have shows that the interdependence of the specific *activity features*, *affective qualities*, and *positive interactive experiences* in the lessons enhanced the level of student engagement and fostered positive learning outcomes.

For history teachers to understand the construct situational theory and translate that understanding to instructional practice, research will need to provide them with an understanding of the situational variables that engage student situational interest embedded lessons and how to

implement these variables in their classroom. This research provides how to engage student situational interest in history lessons. First, this research demonstrates how history lessons that included certain activity features engaged higher levels of situational interest. The following activity features of lessons contributed most to engaging situational interest in subject matter are (1) *novelty*, (2) *group work*, (3) *active learning positives*, (4) *information characteristics*, (5) *discussion consequences*, and (6) *games*. When these activity features were integrated into lessons, highest frequency of student situational interest was shown. The foregoing list of activity features in this study was much more limited than the situational factors included in the work of Bergin (1999): hands-on, discrepancy, novelty, food, social interaction, modeling, games and puzzles, content, biophilia, fantasy, humor, and narrative. However, the activity features not related to situational interest included in Bergin's study were also those most frequently used in the lessons of this study. It should also be noted that Bergin (1999) also suggests interdependence of situational factors and—the interaction of both factors affects interest in an activity.

The activity features foster situational interest and contribute to improved learning behaviors is supported in current claims in research. For instance, novelty elicits exploratory behavior in students (Berlyne, 1966) working in groups promotes a variety of cognitive, affective, and social outcomes in learning (Slavin, 1990); active learning provides students, especially with students with lower abilities, a proactive opportunity to interact and participate with other students (Larson, 2000); vividness of information is a source of situational interest (Schraw, Bruning, & Svoboda, 1995); discussion in lessons provides teachers with a natural, powerful, and effective tool in engaging students in problem solving, decision making, and critical evaluation, which are all needed for active citizenry (Wilensky, 2004); and finally, using games as a

teaching tool increases interest and motivation and provides opportunity for achievement and recognition in learning (Hernandez, 2009). These outcomes of activity features in the extant literature were evident in the study at hand when engaging students' in history lessons integrated with situational interest.

For example, Steve's situational interest in history was influenced by the activity feature called *interactive learning*: "I used to dread going to history because it wasn't a fun lesson, but now we get to interact in all of the lessons. Right now, I kind of look forward because I know we are doing something that will catch my interest, so it's probably one of the classes I look forward to." Steve's interacting with each other in all of the lessons caught Steve's interest. When the design of a learning sequence encourages a student to look forward to coming to history class, it points to the pedagogy of history because history most students do not look forward to attending history class. *Interactive learning* as an activity feature was a pattern observed in the students' interview excerpts . This study offers history teachers insight into how specific activity features could be embedded into history lessons in order to engage student situational interest. Not only *activity features* of lessons were central to the construct of situational interest in lesson design in this research but *affective qualities* and *positive interactive experiences* shared mutual interdependence.

Subject matter relevance and *traits of belongingness* are affective qualities found in this research study. In keeping with the pedagogical need to make history interesting, this study used collative variables and situational factors to engage student situational interest. This research study used a "then" and "now" approaches to exemplify relevance with subject matter to elicit situational interest. Yilmaz (2008/2009) study claimed that the role of relevance is central to making history interesting to students. This study also found *subject matter relevance* to be an

important affective quality in lesson design that engaged student situational interest. Consider how Sam describes the importance of relevance as a situational variable: “Teachers should help the students to understand the information so they can use it in their own life. They shouldn’t let it go in one ear and out the other.” Sam wants teachers to help students understand how subject matter relates to students’ lives outside the classroom. Subject matter goes through one ear and out the other, for some it is not relevant to life. This study supports current research claims that suggest the need for teachers to make students see the relevance of the past and present in pedagogically meaningful ways to overcome students’ dislike of history (Yilmaz, 2008/2009). Yilmaz states, “Making the comparisons between the past and present is central to the efforts to make history relevant and interesting to students” (p. 44). However, this research also argues that history teachers must also consider several situational variables to meaningfully catch/ trigger and sustain situational interest in the subject matter of history.

Traits of belongingness was also an affective quality that played a role in student situational interest. The findings based on this study found “relevance” and “traits of belongingness” as the only affective variables to influence situational interest in a history lesson. In contrast, Bergin’s research (1999) pointed to individual factors that engage student situational interest in subject matter. They are: belongingness, emotion, competence, utility-goal, relevance, and background knowledge.

If history teachers desire to design lessons that engage situational interest, they must understand how “positive interactive experiences” interact with activity features and affective qualities. The “positive interactive experiences” found in this study are: *fun, enjoyment, attention, and a desire to explore influences*. For example, Chad describes positive interactive experiences in the the learning sequence as follows: “Yes. I like the ones that you have to pay

attention to. You can't help but listen to them (the lessons). They are fun." Chad indicates that lessons you have to pay attention to are *fun*. The *fun-filled* experience contributed to Chad's attention and his willingness to listen. Better attention and better listening skills are positive interactive experiences desired by teachers in history classrooms. *Fun, enjoyment, attention, and a desire to explore* have also been found to be related to the construct of situational interest in the literature (Chen, Darst, & Pangrazi, 1999).

Most importantly to the pedagogy of history is an understanding of how the interdependence of activity features, affective qualities, and positive interactive experiences in lessons create student situational interest. Notice how Mary (teacher) describes how teachers need to design lessons to engage situational interest at the end of the study: "Make *it real*. Make *it relevant to the kids*. Somehow, *use a lot of props and things other than textbooks*. I don't think the *fun* part is the biggest part of this. I think the biggest part is that the *kids feel that we are trying to give them as much information as possible and in as many ways as we can*, and the fact that we are really trying to teach them a lot and *get everyone* involved is a huge part of it." Mary aptly points to the following interdependent ingredients in lessons: *relevance, fun, providing information in as many ways as you can, and getting everyone involved* or traits of belongingness. Clearly, the teacher supports an understanding of the interdependence of the *activity features, affective qualities, and positive interactive* experiences in engaging student situational interest.

Positive changes in student learning behaviors in this study were designed with the collative variables and situational factors may also have the implications to the pedagogy of history. Consider how Mike describes his learning behavior: "Yes. Since I was actually taking part in all of the activities, I actually remembered rather than just doing a worksheet, because I

wasn't paying attention before." When Mike was doing worksheets, he did not pay attention. Change in Mike's learning behavior was obvious when he was *taking part* in all of the activities. Mike's participation contributed to his ability to *remember subject matter* and *pay more attention*. Similar to existing studies, this study provides evidence for *improved student test scores*, and *greater student engagement* (Krapp, & Lewalter, 2001), *unmotivated students becoming more motivated* (Ainley, 2006), *higher recall* (Renninger, & Wozniak, 1985), *greater attention* (Hidi, 1995), and *better comprehension of subject matter* (Mitchell, 1993; Schraw, Bruning, & Svoboda, 1995)—all improved learning behaviors resulting from situational interest. In this research. Salient to this study is Ainley (2006) describing the processes of triggering interest: "Triggering interest activates a system that generates positive feelings, focuses attention on the object that has triggered the interest, and in the absence of competing motives will prompt cognitive activity" (p. 405).

This study contributes to the pedagogy of history with the situational interest construct in lesson design that engages students in learning. This study addresses Yilmaz's concerns (2008/2009): history teachers should understand the consequences of their practices and gain insight into the level of student engagement with instructional activities and the students' reactions to these activities in the learning context; history teachers need to reflect and try to develop new ideas about how to teach the same subject matter more effectively: and history teachers should not remain "stagnant" and "stable" (p. 44) but need to keep up with new developments in educational theory and research. This study also rose to the need of educational interventions that engage and maintain student interest in the subject matter (Hidi & Harackiewicz, 2000; Yilmaz, 2008/2009). This study added to the pedagogy of high school history (Hidi & Harackiewicz, 2000).

Most new instructional interventions for teaching history are singularly focused on student inquiry and interpretation without an understanding how these instructional practices influence student situational interest. While pedagogical approaches as “teaching history as a mystery” (Gerwin & Zevin, 2003), “the learning cycle inquiry model” (Bevevino, Dengel, & Adams, 1999), “issues-centered teaching” (Caron, 2004) have contributed valuable inquiry-based approaches to the teaching of history in secondary schools, this study adds pedagogy of history research that seeks to understand how lessons may be designed with situational variables to engage student situational interest. Although student lack of interest in history is a pressing problem in the pedagogy of history (Byrnes, 1997), research regarding how lessons may be specially designed with situational variables to catch/ trigger and hold student situational interest in a history classroom has now been first conducted and findings supported.

8.4.2 Teacher Professional Development

This study investigated four seasons of a teachers’ pedagogical change. Although this research may be limited by a six week time period by which to understand teacher change, it may be of particular importance to contribute to history teachers’ professional development in pedagogical practice that engages student situational interest. Mary’s change occurred through the following sometimes reciprocal, yet more importantly, ordered stages of transformation in the implementation of the learning sequence: Mary’s better understanding of the situational variables that engage student interest because of her change in instructional practice; Mary’s cognition of how the situational variables improved her students’ learning behaviors; and Mary’s change in attitudes and beliefs in designing and implementing lessons that engage situational variables. The evidence in this study is in the sequential order suggested by Guskey’s (2002). Guskey (2002) proffers a “model of teacher change” that suggests the following sequence of

professional development: first, change in teacher's classroom practice; second, change in student learning outcomes; and finally, each of the previous stages leading to a change in teacher beliefs and attitudes. Guskey (2002) argues it is not the professional development *per se* that leads to teacher change, but the experience of successful implementation that fosters a commitment to a new instructional approach. The four seasons of Mary's pedagogical change corroborating Guskey's findings have important implications for professional development.

8.4.2.1 Mary's Instructional Practice Influenced Pedagogical Change

Although Mary was informed of the theoretical considerations of the situational variables in the planning sessions, it was the successful implementation of the specially designed lessons that informed Mary of the role that situational variables play in engaging student situational interest. Evidence based on the consensograms, the student surveys, the student interviews, and the videotapes of her lessons provided Mary with ongoing feedback of how the situational variables in the lessons influenced student situational interest in her lessons (see Chapter Five). Consider how Mary's instructional practice is being changed:

I kept thinking about how the students liked it in the assembly line activity that *everyone was involved*...(So, in this activity) I'll have them put a sign up or something, like "YES or NO" on each side of the room or "The government should be involved," or "The government should NOT be involved," and have them walk back and forth. If they are undecided, they can be in the middle. That is going to force them to have to be someplace. A lot of times in class, I'll try to have them vote on something and a lot of the kids don't vote. They just sit there until we move on. This way they are forced to be involved. I see from what they're doing that it is important to them to have everyone involved.

Mary observed in both her classroom practice and in the videotape of the lesson how *having all of the students involved* in the assembly line activity contributed to the student situational interest. Because Mary believed there was a relationship between the situational factors of *having all of the students involved* and engaging students' situational interest, she applied it on her own to the next lesson in the learning sequence. Mary, in line with Guskey (2002), was able to “believe it works” (p. 383) because she was able to “see what works” (p. 383) by implementing Berlyne’s collative variables and Bergin’s situational factors into her instructional practice. Darling-Hammond (2010) argues that teachers need theoretical grounded tools to use in the classroom; however, they need the opportunity to systematically practice these tools in their instruction. This study implies that successful implementation through instructional practice is a necessary initial stage of teacher professional development to design lessons to engage situational interest. Mary first had to implement the situational variables in her instructional practice to understand how these variables impacted student learning behaviors in her history class.

8.4.2.2 Improved Student Learning Behaviors Influenced Mary’s Pedagogical Change

This research argues that when Mary integrated Berlyne’s collative variables and Bergin’s situational factors into her lessons, and implemented in her classroom, she became cognizant of improved student learning behaviors. This study provides evidence that when collative variables and situational factors were used to design lessons that positive cognitive activity was prompted. Specifically, greater *student engagement* (Krapp, & Lewalter, 2001), *unmotivated students becoming motivated* (Ainley, 2006), greater *attention* (Hidi, 1995), and *better comprehension of subject matter* (Mitchell, 1993; Schraw, Bruning, & Svoboda, 1995), and *higher recall* (Renninger, & Wozniak, 1985) were all improved learning behaviors related to

student situational interest in this research. All of these learning behaviors led to improved student achievement.

For Mary, *asking more questions relevant to history, looking things up to find out different things, looking things up at home at night and thinking about the subject matter* were important student behaviors. Although by the end of the study, Mary became convinced of how designing lessons with situational variables improved student learning behaviors, she was persuaded only through evidence in her instructional practice. Better student essay scores also contributed to Mary's pedagogical transformation. For history teachers' pedagogical change, designing lessons with situational variables to engage student situational interest—the instructional practice must provide evidence of positive learning behaviors.

8.4.2.3 Successful Instructional Teaching Practice and Positive Student Learning Behaviors Influence Pedagogical Change

Mary's attitudes and beliefs about the value of designing lessons Berlyne's collative variables and Bergin's situational factors were changed because of the success she had in her teaching practice and the change she witnessed in her students' learning behaviors. Mary's attitudes and beliefs were not altered by the theoretical professional development provided in the early planning sessions of the study (see Chapter Four). Mary considered the book provided to her as "ivory tower stuff," and she suggested that such lesson design may be just an "added nuance" that would detract from teaching the state's content standards and benchmarks.

Consistent with the work of Caron (2004), Mary felt apprehensive about designing lessons with the situational variables and she wanted instructional strategies and materials that could immediately be utilized in the classroom. It was through her ability to "practice in practice" (Darling-Hammond, 2010) and through the evidence experienced in the multiple data

sources that supported positive changes in student learning behaviors Mary's pedagogical attitude and beliefs changed (see Chapter Seven) as exemplified in the following interview excerpt:

I think we made it *fun* again for everybody, for me too. It was a lot *different*. And it made history *very pleasant* for all of us. If I were going to give specifics I would start it out, it made it *fun* again. The kids could give a lot of information as well. They might not be able to give me dates and specific facts, but they can give me the story of what has happened with the big picture. *I would say probably 95% of the kids could do that based on the activities and the test scores. It's not just the top 20% of the kids who are good at taking tests and all that.*

Mary no longer viewed designing lessons with Berlyne's collative variables and Bergin's situational factors as an "added nuance" but as an instructional intervention that made learning history "fun again." Mary also contrasted it was not the 20% but 95% of the students understood the "big picture" in history, and resulting in students improved test scores.

A typical American history teacher, like Mary at the beginning of the study, relies upon textbooks, worksheets, study guides, maps, quizzes, and tests as common pedagogical practice (Warren, 2007). Such instructional practice did not inform Mary's educational that engage student situational interest in subject matter (Ainley, 2007). Mary's willingness to design lessons to enhance student situational interest was predicated only as the result of being able to see the intervention work through her own instructional practice. This study supported four seasons of Mary's pedagogical change through a gradual and perhaps a painful process.

8.5 Recommendations for Future Research

The call for research that focuses on educational interventions that catch/trigger and maintain student situational interest is replete (Ainley,2006; Hidi & Harackiewicz, 2000; Hidi & Renninger, 2006).However, the studies are few in number in lesson design that fosters student situational interest are few (i.e., Bergin, 1999Mitchell,1993; Schraw, Flowerday, & Lehman, 2001). Although this research has added to the literature on situational interest, more studies are needed.

The next reasonable step might be professional development to a large group of history teachers based on this study situational interest in lesson design and evaluating teacher change through a statistical process. Shifting from the focus from one teacher change to several teachers will have the study's promise of generalizability. The shortcomings in this study render a list of recommendations for future professional development research. First, a large-scale study should pay closer attention to the stages of professional development for teacher change and approaches to diminishing the dilemmas in the learning environment. Second, this study explored only low or medium level examples of using conceptual conflict (or perturbations) in lessons. Professional development should include activities that seek to understand the relationship between higher level conceptual conflict and creating situational interest. Next, the cognitive implication of situational interest must be central in this day of high stake testing. Future research should emphasize the role of situational interest on student academic achievement. Finally, studies that seek to understand how situational interest is embedded in lesson design must be conducted.

Lesson design that promotes situational interest has many affective and cognitive benefits for classrooms. Like all educational interventions, it is an approach to lesson design that has strengths and weaknesses. However, if the focus of school reform switches from the

administrative unit to an interactive focus, research in curriculum design that promotes situational interest may leave a footprint in educational reform.

APPENDIX A

HUMAN INVESTIGATION COMMITTEE APPROVAL FORM

**WAYNE STATE
UNIVERSITY**

HUMAN INVESTIGATION COMMITTEE
101 East Alexandrine Building
Detroit Michigan 48201
Phone: (313) 577-1628
FAX: (313) 993-7122
<http://hic.wayne.edu>

NOTICE OF EXPEDITED APPROVAL

To: Christine Morgan
Deans Office Education

From: Ellen Barton, Ph.D. Ellen Barton
Chairperson, Behavioral Institutional Review Board (B3)

Date: March 02, 2007

RE: HIC #: 128906B3E
Protocol Title: A Genesis of Situational Interest: Berlyne's Collative Variables for an Instructional Set
Sponsor:
Coeus #: 0612004451

Expiration Date: March 01, 2008

Risk Level/Category: No greater than minimal risk.

The above-referenced protocol and items listed below (if applicable) were **APPROVED** following *Expedited Review* (Category 1*) by the Chairperson/designee for the Wayne State University Behavioral Institutional Review Board (B3) for the period of 03/02/2007 through 03/01/2008. This approval does not replace any departmental or other approvals that may be required.

- Assent Form
- Teacher Consent
- Parental Permission/Research Informed Consent

- Federal regulations require that all research be reviewed at least annually. You may receive a "Continuation Renewal Reminder" approximately two months prior to the expiration date; however, it is the Principal Investigator's responsibility to obtain review and continued approval **before** the expiration date. Data collected during a period of lapsed approval is unapproved research and can **never** be reported or published as research data.
- All changes or amendments to the above-referenced protocol require review and approval by the HIC **BEFORE** implementation.
- Adverse Reactions/Unexpected Events (AR/UE) must be submitted on the appropriate form within the timeframe specified in the HIC Policy (<http://www.hic.wayne.edu/hicpol.html>).

NOTE:

1. Upon notification of an impending regulatory site visit, hold notification, and/or external audit the HIC office must be contacted immediately.
2. Forms should be downloaded from the HIC website at each use.

*Based on the Expedited Review List, revised November 1998

APPENDIX B

TEACHER CONSENT FORM

Research Informed Consent for the Teacher in the Qualitative Study

Title of Study: Genesis of Situational Interest: Berlyne's Collative Variables for an Instructional Set

Principal Investigator (PI): Christine L. Morgan
 Doctoral Candidate at Wayne State University
 810-724-2765 extension 416

Please read this form and ask any questions you may have before agreeing to be in the study.

Purpose:

You are being asked to participate in a research study at Imlay City High School that is being conducted by Christine L. Morgan, a doctoral candidate from Wayne State University, to discover if a new method in lesson design will engage the interest of students in sophomore social studies classes. You have been selected because the study is being conducted in sophomore social studies classes, and you are a teacher who has expressed interest in learning new ways to interest children in your lessons. **Please read this form and ask any questions you may have before agreeing to be in the study.**

Study Procedures

If you agree to take part in this research study, you will be asked to agree to the following research protocol. Jane and I will be meeting once a day for one hour for over a period of six weeks. One hour before the start of each school day, we will meet to discuss and develop the design of the instructional set of each lesson. The conversation of our lesson planning will be audio recorded. This is done in order to document how Jane has been mentored by me (the researcher) and to create the context in which she will be designing the instructional set. At the end of each day, a contact summary sheet will be completed to identify the main concepts, themes, issues, and questions that were encountered during the contact may be logged. An entry in a journal will reflect on my field observations (Miles & Huberman, 1994).

Under my mentorship, Jane will create an instructional set for every new lesson during the six week period. Each lesson will be audio/ video recorded to provide for her a context to discuss her experience of using an instructional set that creates cognitive conflict. I will first watch the video and select out excerpts that confirm or disconfirm situational interest. Using these excerpts, I will carry out one weekly individual interview with Jane, which will be audio recorded. Jane will be asked the following questions at each weekly interview:

- 1) What sense do you make of this excerpt?
- 2) What main issues or themes strike you?

- 3) What cues did you observe that provide you with evidence or lack of evidence that students are interested?
- 4) Did any specific aspect of the instructional set elicit more or less evidence of interest in the instructional sequence? Why do you believe this is so?
- 5) Does any phenomena that we have not discussed strike you as being salient, interesting, or illuminating?
- 6) What questions do you have about this research?

The interviews will be conducted once a week after school for one hour. This means there will be a total of six hours of individual interview recordings. In addition, I will take field notes of my observations of the students and of Jane when she is teaching. This will be followed up with journal writing of my reflections of Jane's teaching and her students' interest in the lesson. When the unit is completed, there will be a three hour summative interview with Jane. This will be audio recorded. A journal reflection will follow the meeting.

To enrich the insight of the evidence that confirms or disconfirms whether or not the students experienced more situational interest over the six week unit, the questions on the Situational Interest Scale will be modified to an open-ended format that will cover the entire six week unit (Chen et al, 1999) and it will be administered to all of the students in Jane's class for feedback. Moreover, at random, half of one hour interviews will be conducted with seven students in the class.

Benefits:

The possible benefits to you for taking part in this study are that you may learn a new teaching approach that will encourage more interest in the content of your lessons. Additionally, information from this study may benefit other people now or in the future.

Risks:

There are no known risks at this time to you or your students for participation in this study.

Costs

There are no costs to you to participate in this study.

Compensation:

You will not be paid for taking part in this study.

Confidentiality:

All information collected about you during the course of this study will be kept confidential to the extent permitted by law. All information collected about your child during the course of this study will also be kept without any identifiers.

Voluntary Participation/Withdrawal

Taking part in this study is voluntary. You have the right to choose not to take part in this study.

Questions

If you have any questions about this study now or in the future, you may contact Christine L. Morgan at the following phone number (810) 724-2765 extension 416. If you have questions or concerns about your rights as a research participant, the Chair of the Human Investigation Committee can be contacted at (313) 577-1628. If you are unable to contact the research staff, or if you want to talk to someone other than the research staff, you may also call (313) 577-1628 to ask questions or voice concerns or

Consent to Participate in a Research Study

To voluntarily agree to take part in this study, you must sign on the line below. If you choose to take part in this study you may withdraw at any time. You are not giving up any of your legal rights by signing this form. Your signature below indicates that you have read, or had read to you, this entire consent form, including the risks and benefits, and have had all of your questions answered. You will be given a copy of this consent form.

Signature of participant / Legally authorized representative

Date

Printed name of participant / Legally authorized representative

Time

Signature of witness*

Date

Printed of witness*

Time

Signature of person obtaining consent

Date

Printed name of person obtaining consent

Time

*Use when participant has had this consent form read to them (i.e., illiterate, legally blind, translated into foreign language).

Signature of translator

Date

Printed name of translator

Time

APPENDIX C

Parental Permission/Research Informed Consent for Qualitative Study

Title of Study: Genesis of Situational Interest: Berlyne's Collative Variables for an Instructional Set

Purpose:

You are being asked to allow your child to be in a research study at their school that is being conducted by Christine L. Morgan, a doctoral candidate from Wayne State University, to discover if a new method in lesson design will engage your child's situational interest. Your child has been selected because the study is being conducted in sophomore social studies classes, and your child is a member of the class where your child's teacher has volunteered to conduct the study.

Study Procedures:

If you decide to allow your child to take part in the study, your child will be asked to participate in a six week qualitative study. During this six week period, your child's teacher will be mentored in a new way to design a lesson to engage your child's interest. Throughout this unit, your child's lessons will be audio and video recorded. Excerpts from this text will be edited out to establish confirming or disconfirming evidence that your child is more interested in each of the lessons. At the end of the six week unit, your child will be asked to respond to a 19 question open-ended questionnaire in the form of an individual interview. This will that explore your child's reaction to the six week experience. The individual interview will be audio recorded. His/her participation will be voluntary. A copy of all instruments will be made available in the high school office.

Benefits:

The possible benefits to your child for taking part in this study are that your child may be more interested in the content of the lesson as a result of the new lesson design. Additionally, information from this study may benefit other people now or in the future.

Risks:

There are no known risks at this time to your child for participation in this study.

Costs

There are no costs to you or your child to participate in this study.

Compensation:

You or your child will not be paid for taking part in this study.

Confidentiality:

All information collected about your child during the course of this study will be kept confidential to the extent permitted by law. All information collected about your child during the course of this study will also be kept without any identifiers.

Title of Study: Genesis of Situational Interest: Berlyne's Collative Variables for an Instructional Set

Voluntary Participation /Withdrawal:

Your child's participation in this study is voluntary.

Questions:

If you have any questions about this study now or in the future, you may contact Christine L. Morgan at the following phone number (810) 724-2765 extension 416. If you have questions or concerns about your rights as a research participant, the Chair of the Human Investigation Committee can be contacted at (313) 577-1628. If you are unable to contact the research staff, or if you want to talk to someone other than the research staff, you may also call (313) 577-1628 to ask questions or voice concerns or complaints.

Participation:

If you do not contact the principal investigator (PI) within a 2-week period, to state that you do not give permission for your child to be enrolled in the research trial, your child will be enrolled into the research. You may contact the PI at cmorgan@imlay.k12.mi.us or at Christine L. Morgan, 1001 Norlin Drive, Imlay City, Michigan 48444 or at (810) 724-2765 extension 416.

If you do not wish to have your child participant in the study, you may fill out the form and return it to your child's teacher.

I do not allow my child _____ to participate in this research study.	
Name	

Printed Name of Parent	
_____	_____
Signature of Parent	Date

APPENDIX D

SAMPLE INTERVIEW TEXT WITH MARY

Monday March 19, 2007

M: I am going to be there to kind of steer you to achieve the variation that I think is going to engage, ok, with ideas that I thought about with the chapter, ok so we are going to come in I also have a goal and that is to discover how teachers begin to plan for their lessons, I'd like to know that, so if you could talk to me about your thinking about that

B: I think it's different everytime, like I told you last week, I think that this year for me, I feel like, my life I have a certain part of the pie that I have time to devote to planning lessons, as compared with you know I have to check with my own kids and that kind of thing. With the time that I am spending on it this year, a lot of the time that I am spending as you know a first year person doing this is actually learning the content myself I spend a lot of time myself reading through the chapter and brushing up on things and making sure I understand it so I don't necessarily have as much time to make, you know next year I'll have the time to sit down and look through the lessons and make them into kind of gold star ones that I would want them to be. I think a lot of first year people, I would imagine would be something like that as well.

M: When you go back to lessons assigned to you, do you draw from what you learned in college, how do you format your lessons, it is something, I know you have a masters degree in teaching, are there things in there that convinced you also, I know you taught a brain based class in the summer, what is the very first thing when you sit down, ok this my week ahead of me what is the first thing that you do? And kind of talk about sequential in your mind, if that's how it occurs, I don't know how does it occur, what is, how do you view lesson planning?

B: I guess I look at when I first came over here, every time when I teach something here, I check the curriculum, And go through things and make sure I am covering the things I need to be covering, I go through that first, then I look through the chapter, because this year I am pretty much following the text book in terms of getting the information that I need to get I am hoping after this that I can vary it a little bit, but this year I am following the text book and I actually look to see, I kind of block out the next chapter, the entire chapter and see how long it is going to take me to teach it then what kind of activities that I want to have the kids after I give them the information, I am finding with the kids, or least the majority of the kids I am spending a lot more time on each chapter than I would think I would need to, for them to understand it

M: Why do you think that?

B: When I remember taking history classes when I went to school, I don't put U of M into because, I don't feel I can, you know what I mean, it was a different situation, but when I was in school, we would spend everyday, almost like the unit you were talking about in the meeting, everyday was one section, we went through this section, everyday, we knew what was going to happen, we knew what was expected, we read the chapters and there were the kids who

failed and the kids who passed, that was just the way it was, do you understand what I am saying?

M: I do! Yes!

B: I don't know if that is right or not, but that is just the way it was. Everyday we'd follow the same things, we did the questions at the end of each section we did the questions at the end of each chapter, then after the test day, we watched a movie the next day. That was the way we did it.

M: Yep, week after week

B: Right!

M: That's how I did, in high school too.

B: And the funny thing was, was that I liked it, it worked for me. I liked History, so it wouldn't have mattered how it was taught you know what I mean, but then back then, I didn't have a Nintendo, I didn't have all this stuff that made everything so exciting and fun, after school so I wasn't competing you know Mr. Tibor wasn't competing against all this stuff, you know I had channels 2,4, and 7 at home, and that was it. It is different now, those are things that when I look in the back of the room and I have a kid that is secretly listening to a radio and I couldn't even tell until I got back there, I realized what I am going up against, but it is a lot different now than it was back then so this is all I have to compare it against, so when I look at things it was really easy for me to read the chapter and to understand what was probably going on in terms of History when I was in school, but that is what I did, I was a reader I was into all that kind of stuff and I look at the kids now and they are not. If I ask them to read a section of material and then I asked questions without going over it and I try to bring up conversation and stuff it is very obvious that they did not understand what that particular section was talking about.

M: Do you think the kind of learner that you are, influences how you approach your lessons? Do you think that is reflective in how you prepare for a lesson? Because it is easy for you to read do you think that is true for most teachers, that we create lessons that are much like how we like to receive it? Well, maybe a better way to put it, it is more natural for us.

B: I think a lot people maybe look at things at the way in which they learned it themselves.

M: Ah, ha.

B: Just because that is their experience, now I don't teach things in terms of the way that I best learned them, I don't think I do that at all. I think teaching bilingual brought a lot of things to me that I didn't know before that and even though it was for bilingual kids it stands to reason for a lot of students as well, the special ed students I think we have a lot of kids who, I don't want to say whether they are low readers or not, because they might be very good readers, but I think that a lot of kids have very low reading comprehension, even though the fluency may be great, you know what I mean, so they can read a lot of things but when they are reading a text book I don't

think a lot of kids understand what it is exactly they are reading, and I don't know if that has changed, did kids read better in the 80's or the 90's then they do now? Do you think?

M: Yes

B: Do you think that is? And why is that?

M: Well, because I think there was more of an emphasis on the strategies that get kids to learn better there was more drill, practice, I remember learning how to read phonetically and I am not criticizing ___ because I know there is basis for that, but there is that certain mentality, structures and process and whether that's the best or not, that's not what I am saying there is something here like children are coming to this level with a very poor reading level.

B: I would go so far as to say language abilities, they can't spell

M: They can't put sentences together. They can't even write in complete sentences. I think is going to help me

Too when we are working together for 6 weeks, especially your back ground in special ed and spanish as a second language, it will help my perspective. How did they teach you to prepare for lessons in college especially with you just getting through with that Marygrove experience? Was there a lot of lesson design there?

B: No.

M: How about the college experience with U of M was there a lot there?

B: No.

M: So it's pretty much, you are on your own.

B: Very much so.

M: So you are bringing, that surprises me at Marygrove, they didn't even touch on like a unit on lesson design?

B: Well, I think because it was a master's level class they assume we already knew that, they went on from there.

Probably my best experience with lesson design would have been I took a class in my other masters degree at Saginaw Valley, middle level education and this man named Joe Snyder who definitely sounded like Burl Ives, it was really interesting, he did this great thing in it, even though we didn't know it at the time it incorporated a lot of brain base learning at the time they called it middle level education, you know the kids need a certain amount of time for this and they need movement and excitement and all this kind of stuff, well it turns out fifteen years later, well everyone does, but that was a time what these adolescents that are 12 to 14 is what they need.

M: So do you bring that in when you start to plan your lessons now?

B: Well, sure the brain based stuff, yeah, oh absolutely.

M: So with that when you begin, let's start with Chapter 12, how do you start? Ok you are staring this new chapter, what are you thinking in terms of, talk it out with me...

B: This is what I do, right, wrong, indifferent, this is what I do. I usually take the material that I have you know the content and I look at it and I see how it would best break up into classes in terms of things I take it now to well I do try to get the kids to do some reading on their own, I usually find it is a waste of time, even when I give it during class time for them to read the chapter, because I will get done and I will talk to them about and I might have one kid out of 30 who has comprehended what he has read and actually use what we have done. So I don't do that very often anymore, instead I usually give them a lot of notes and have them go through, usually on the overhead, and I try to break everything up so it will make sense so the kids can learn it, and from there I take the overhead notes everyday and see what kind of activities I can use to re-enforce this and look through things and I look through the stuff and the text book and quizzes and worksheets and stuff like that you know like map strategies, see if there is anything good some of the chapters are good with it and some I don't like as well. Also see if there are things that I have especially in my 2 nd hour class, I have a couple of very low, low readers in terms of spec. ed, and I have one that does not speak English, so I what I can do for them in terms to see that I have an equivalent homework assignment and things to re enforce what we are doing, then I go through to see what vocabulary words that are in the chapter that I feel they are very important they learn but some are not important and some are more important, I make sure I incorporate them into the overhead notes like five different times, then I have the kids kind of what Demas does, I have them do the vocabulary words and draw a picture with it, do different things with it and write the textbook definition and we go through the textbook definition because they won't know what it means anyway, then I break it up into days, I kind of set my whole time up and at this point I'll have the test and the review and plan that and make sure I don't have it on a Monday or something, and then I'll include a movie or something from united streaming that will go along with it.

M: When you look at the content do you identify the relevance to the kids, do you think about this when I am teaching this chapter and I begin with the idea of relevance to the kids? Have you ever done that?

B: When you say relevance do you mean what is going to make the kids excited? What do you mean by that?

M: Relevance to their lives, how this would touch them.

B: I try to make a lot of connections to things that will help them to understand it I guess I don't pick out my content based on what they may be interested in, I'd love to be able to do this, but I don't know if we can.

M: What do you mean, I don't know if we can?

B: Well, I thought of that when I first came here, that I was going to pick and choose the cool stuff to teach them, then I see the list of things that the kids are supposed to know from the MME and that kind of stuff and there is a lot of things on there that I necessarily wouldn't call the cool stuff...

M: When I say relevance I don't mean just the cool stuff. I am not saying that there is just cool stuff,

B: I try to make a lot of connections I try to think of as many things as I can, maybe not to the level that we'll be in this, but I tried like when we are doing the different notes and things I try to get the kids involved as best I can make up stories, you know kind of go along with what we are doing trying to get the kids involved in it, you know imagine we were talking about the cost of living doubles, after world war I, and all this kind of stuff. When I start for example tomorrow, when we start talking about chapter 12, the first thing I am going to do with them is brain storm about how the US had been affected by the war, so how things were for people after all the troops were back.

M: Do you mind if I write this on the board, you know me, because I am tactile and kinesthetic, and I have to that's just my rhythm. So here's what you are saying, we are going to start out what it is like after the war.

B: Envision what it was like after they came back to the U.S. after the war.

M: And how are you going to do this?

B: I have these, I don't let the kids pick their own groups anymore, number one I have so many boys and it doesn't work, because they get together in their little groups and talk about cars or whatever, I have these Spartan heads that are in different colors after the kids come in I give them one and they have to get into their color groups.

Then we are going to discuss it as a class put notes on the board that kind of thing and then they are going to put the notes down on paper so we can continue to go through the overhead notes, we'll be able to highlight the things that we talked about that were correct that happened.

M: You are going to highlight the notes right? Then what?

B: Tomorrow, that's it for tomorrow.

M: That's tomorrow, this is Tuesday's. Talk to me a little bit more, starting out, what is it like in a war? You are saying this, is this going to engage their interest immediately? Do you think?

B: I'd like to, what I'd like to do in fact, to be able to keep that, I have these history folders that they keep stuff in, and I'd like to be able to keep that, b/c this is the first world war that we've done and see if it holds true after world war II also, and then after be able to discuss what it is going to be like when the troops come back from Iraq and all of these things and see if they hold true.

M: Ok see if there are these themes that are intergrated after the war experiences so you are going to take their observations make it a collective for corrections You are starting a brand new chapter, and this is a good activity, do you think there is another way we could get their interest immediatly to where we are going that has relevance? Do you see do you think this whole media will engage them? Would you feel that on the video this will immediatly engage their interest?

B: On some of them it will.

M: Is there anyway we can bring them all on board with where we are going?

B: Well actually that is something that I want to ask you about because I have my journal listed I have the kids do a journal everyday when they first come in.

M: What do they do there?

B: It depends, I've done it throughout the year a couple of different ways, I've had them write a short write everyday either on the stuff we did the day before, or review stuff for the test, I've also done it where I've had them, and they like this better, and I know why, just different historical facts, and they like to discuss them, it may won't tie into what we are doing that day, it may be something about the history of baseball, they like the idea that history is all those types of things as well.

M: Yeah.

B: What do you think I should do with this? Because I did not set out my journals for this week at all, I was going to wait until after we discussed.

M: Ok, I would like to see that we can work together to immediatly create, I gave you that book to look at how we can look at content differently, how can we engage them through surprise, complexity, ambiguity, novelty, something they are not going to expect, I don't mean this through shock Please after that parent said that.

B: Remind me to email her and thank her.

M: Ah?

B: Remind me to email her back and thank her.

M: I wonder if I should play a role in that too, let me know your insights on that, ok?

B: Well if she emails me anything, I'll let you know

APPENDIX E

SAMPLE INTERVIEW WITH STUDENT

FILE 2 23:26

M: Hi, I just want you to relax and let Ms. Morgan tell you what we are going to do. Your name and everything will not be included, nobody will see this.

ST: But I could be a star!

M: It all be reduced down to figuring out how do we interest kids? It is important to Ms. Morgan, but it is more important that you tell me your story, and you are honest, and we are going to help the students of the future, so we have to get to the heart of the matter here, Ms. Morgan has been boiling things down and taking a good long hard look at it, so please be honest. I like honesty; it's just the way I am.

M: **OK, the lessons over the last three weeks, have they been more exciting to you?**

St: **Yes, they have because they went more into detail and really brought stuff out so I can actually think about it and see how I can learn more and it made it more interesting to the class and everything.**

M: **Can you think of a specific activity?**

ST: **The model T activity, and how the model T is made on the assembly line and how we did it in class and move our papers around the desk and it made it just like it really was, it actually showed us what they did on the cars and they couldn't talk or sit down and it showed us how our backs hurt after 15 minutes but they did it for 8 hours.**

M: **So it gave you a pretty good idea with your senses. Did you like that one?**

ST: **Yes, I liked that one a lot.**

M: **Would you say that the activities in the last three weeks have been too complicated or simplified?**

St; **I think they were about the right size... not too complicated, but just right, you had to think about it , but you knew what to do.**

M: **OK let's talk about some of the activities that you have done, which one actually held your highest attention?**

ST: **I think it was the model T one and the immigration policy.**

M: **You liked that.**

ST Yes

M: Let's talk about the characteristics of those activity that made it the most interesting.

ST the immigration one, I thought depending on who we should let in and how many we should let in, like Dr. how many how many farmers and stuff like that. The model T showed us what people went through and how much they got paid to work 8 hrs. and only made \$5 for a day, that work Henry Ford is like nothing now.

M: A dollar a day! What about the advertising activity when you had to move around and you had incomplete, remember you had to figure out what they were advertising, did you like the fact that you didn't know what they were doing right off?

St: Yes, one of the shampoo ones, I thought they were advertising the jeans so I was looking at the jeans it made me think they are not advertising the jeans, they were advertising the hair , because her hands were in her hair so this one is something with the hair.

M: So you had to look at the clues, and you liked that?

ST; Yes, those I find interesting, to pick out the clues.

M: Did you like the fact that they were real advertising from a publication from that year, did that attract you?

St; Yes, some of the advertising from back then to now, comparing it is different, but they still made you think of what they were selling.

M: Was it interesting that they were going from a then and now perspective, did you like that?

ST: Yes, I liked that.

M: What about today's activity, where you had to get up and choose a road that you had to choose.

ST: Yes, I liked that one because we found out what other people thought and not just what you thought. Our class did the seat belt one and we found out that more people did not like the seat belt one and most people we had a few in the middle, but listening to everyone's reason made you want to go both ways.

M: Did it make you come to an understanding of what you felt, because of other peoples opinion?

St: Yes.

M: Do you like the type of activity where you hear other peoples opinion?

St Yes, I like those because you are not just hearing yourself and what your parents think, you are hearing what everyone thinks.

M: You like it when everyone gives their opinion?

St. Yes it makes you think.

M: Is that important?

ST; Yes, I think it is important, you are also thinking about the other peoples side and where they are coming from, not just your side of it.

M: Sometimes can they say things that you didn't think about?

St: Yeah, like when we are on notes about the seatbelt, they said people should just wear seat belts if they want , but the other side said when you turn 16 people in the back seat have to wear seat belts. I thought that was interesting.

M: What about the electricity one? When the janitor comes in...did you like that with the zambonie?

ST; Yes, that was cool, we had to do the electricity with the advertising and with the lights off it was hard to see, we needed flashlights to see, but we didn't have any and it made it hard, so now we know where they were coming from.

M: Do you think the activity that appeals to your senses, does that help? Do you think most students like that?

ST; Yes, because we get an actual feel to what happened with most people, now with electricity we take everything for granted, but back then they went everyday with no electricity.

M: What about the picket sign, when you had to say, oh, OK now I'll pick up a picket sign...that one was about the Jungle, and the meatpacking, what did you think about that one?

ST: I liked that one because you don't, now you see everyone wearing gloves and how much safer it is to eat the food, but when you hear about back then and how they didn't even wash there hands and just used their bare hands that is kind of gross!

M; How about the car activity and the benefits of the automobile, did you like that one?

ST: Yes, I thought that one was good and what autos are doing to the world today, and they are transportation and I thought that was a benefit but some of the stuff I thought was a consequence like pollution and stuff like that, but benefit was transporting goods so we can have food to eat instead of waiting to get food.

M: Would you say these activities in the past three weeks, helped you on the test?

ST: Yes, they helped me a lot on the test because I usually am average, but when I took the test this time around, I was an A or B and this is helping me a lot.

M: Great Wow, think back to the test, when you were taking the test was there ever a time thinking about these particular activities?

ST: Yes, some of the answers I thought of, the electricity one, the assembly line and working at the answers I thought oh, here is the answer because I actually did it so I thought of the answer.

M: Would you call it fun, the learning for the last three weeks?

ST: Yes, doing the assembly line, doing the pickets, advertising, doing all that was fun but it still made you think.

M: If I said, OK, Ryan out of all the things that you worked on so far, what has made you held the most attention, out of all the activities?

St: The thing that held my most attention was the model T because I like cars and how they started and what they did on the assembly line and how they couldn't talk or anything, really caught my interest, and about the hard stuff, and how they have knee protection now so they can actually bend down, talk a little bit, they can't really talk because it is so noisy, but this really held my attention.

M: So because you like cars, would you say when activities are more relevant to you, that really holds your interest, does it?

St: Yes I think when you find something a person really likes, will hold their attention more.

M: Should teachers try to think how the relevance of the material affects the kids, do you think that is important?

St: Yes, I think the teacher should find out what the students like and one day, do something that that kid likes, because you never know some other kids might like that and then do another activity that somebody else likes and then they might get into that so it might all come together.

M: Do you like to understand how these pieces of history relate to you like when we do the activity, do you think it is important that the teacher puts out to the student why this should be important, does that enter into the aspect of interest to you, when a teacher explains that?

St: Yes, I think about the past and how that is relating to the future, I think about that, that's really interesting. The electricity a lot of people liked that one, because they are thinking about how much stuff we take for granted.

M: Was there anything about any of the activities that made you want to go on further to learn more about that activity?

ST: I think the one where we did the moving back and forth, I'd like to hear more about what the government is doing and seeing other people's opinions on that.

M: Let's pretend that you are Ms. Morgan's student teacher, ok? So I am going to ask you to make these activities interesting for the kids, tell me how are you going to do that? You are going to say, Morgan this is what the kids need...

ST: Make it more interesting so the kids don't fall asleep, not to read out of the text book, do more hands on, do more activities make sure more kids are involved I think that would be best for the kids to get their interest.

M: Let's say that you are going to make an activity about bootlegging we are going to talk about prohibition. How would you do that for kids? For bootlegging and roaring 20's?

ST: I think for prohibition, we could drink in class then I would have a few people drinking in class, because during prohibition some people never stopped, have people bring in drinks.

M: OK! I like that, that's a good idea! What else?

ST: I don't know.

M: Everybody made their own...my grandfather did, he had it in the basement!

ST: For prohibition not drinking in class, see how many people would drink in class.

M: How about the roaring 20's?

ST: That was after world war I, I can't think of anything...the women started to vote...

M: Yep, was that trouble????????????????? What could we do with that to get interest? Do you think we could do something where only the guys could vote?

ST: We could have it where only the girls get to vote so the guys can see what the girls had to go through.

M: Ok, we'll start it out where nobody can drink in class, and then we'll start another day out where we ask their opinions but the boys can't talk. Do you think that'll be good? Ok just a few more questions, would you say that the learning has been fun?

ST: Yes, the learning has been a lot more interesting compared to the beginning of the year, it really has grabbed my interest, to go to that class and learn what we are doing the next day, instead of oh, here's another class we're going to read out of the text, but for the next three weeks it really has grabbed my attention to want to go to that class, because I know it is going to be something fun!

M: Would it be fair to say you have enjoyed going to class for the past three weeks?

ST: Yes, I have enjoyed it.

M: Would you say your interest was caught in the activities—caught and held—not caught much at all.

ST Definitely caught and held.

M: Has anything been too hard or too easy? Should we make it more hard, or more simple?

ST: I think it is just right, it's not too easy, it's not too hard.

M: Have there been moments when you have had to focus pretty hard? The advertising did you find you had to focus to fill in that gap?

ST: Yes, we had to figure out what they were selling, some were easier, but some you really had to think about it.

M: Did you want to know, did it create a need for you to want to know what it was?

ST: Yes, some of them took me a long time, I was like, come on, what is it? I really had to think about it!

M: So there hasn't been anything too demanding or too hard for you? So you said you got a better grade on your test! That's great! Did you ever want more details that maybe we didn't provide, or to talk about longer, is there anything that we should have given you more of?

ST: No, I think everything was given right, but going on with one more day with the advertising, we could have, or the car benefits, we could have done more or a few more days.

M: One more thing, a lot of students brought up games, when you talk about games, tell me what you mean about that.

ST: Like make a board game about history, like Monopoly like you had a chance card and you read it and if you get it right, go so many spaces, like that.

M: Ok, board games. What if everyone was responsible in stations or groups where kids created a scavenger hunt and each kid creates a particular table. Would you like that?

ST: Yes, that would be good.

M: Thank you so much, Ms. Morgan appreciates this!

APPENDIX F

SITUATIONAL INTEREST SCALE USED IN STUDENT INTERVIEWS

Open-ended Situational Interest Scale

Grade____ Age____ Male____ Female____

1. Were the lessons over the past six weeks exciting? How would you compare/contrast the lessons to the lessons before the six week unit?
2. Were the lessons complex? If so, cite the lesson and provide your reaction. If not, cite a lesson and explain your reaction.
3. Has what you have been learning been complicated or too simplified? Has this attracted or detracted your attention from the lessons. Provide examples in your answer.
4. What learning provided your highest attention? What were the characteristics of a lesson that commanded your attention? What were some aspects of a lesson that detracted from your attention?
5. Was learning over the past six weeks fun for you? If so, explain what made it fun. If not, explain what made it boring?
6. Was it easy to pay attention to what you have learned in the last six weeks? Explain why or why not.
7. Did the way the lessons were presented make you want to find out more about the topic? Provide examples.
8. Would you rate any activity in any of the lessons as exceptional?
9. Over the past six weeks, what parts of the learning were most appealing to you?
10. Was there anything in the way any of the lessons were presented that made you want to analyze and have a better handle on what you have been learning. If so, explain what things in one of the lessons made you want to feel this?
11. Over the past six weeks, has the learning been fun and made you want to try? Explain.
12. Has the learning over the past six weeks been new-fashioned? What made it new –fashioned to you?
13. Have you enjoyed learning over the past six weeks? Tell what you have enjoyed most?
14. Over the past six weeks, what pieces of learning demanded your focus. Describe these pieces.
15. Has what you have learned in the lessons in this unit demanded your concentration? Give an example of when you had to concentrate.
16. Is this a true statement “What we have been learning has been interesting.” Explain why or why not.
17. Which statement is most correct: The activities caught my situational interest; The activities did not catch my interest; The activities caught and held my interest; Some activities caught and held my interest; The activities did not catch or hold my interest.
18. Was what you have been doing in this unit been hard for you? to do or too demanding? Explain.
19. Did you ever want more details of how to do what you were learning? When?

APPENDIX G

WORK SHEET FOR CONSTANT COMPARATIVE APPROACH

My qualitative cheat sheet

Journal entries will include my procedural steps, decision rules, analysis operations, conclusions drawn, identifying further questions, and researcher comments.

Worksheet for analyzing my data:

1. As soon as I start collecting my data, I begin making sense of my information.
2. Is there a loop-like pattern that is being unearthed in the multiple rounds of revisiting the data?
3. Define and address the additional questions that are emerging.
4. As I visit the data, keep asking the following questions:
 - What patterns and common themes emerge in responses dealing with specific items? How do these patterns or lack of help illuminate the broader study question(s)?
 - Are there any deviations from these patterns? If yes, are there any factors that might explain these atypical responses?
 - What interesting stories emerge from the responses? How can these stories help to illuminate the broader study questions?
 - Do any of these patterns or findings suggest that additional data maybe collected? Do any of the study questions need to be revised?
 - Do any of the findings corroborate the findings of any corresponding qualitative analyses that have been conducted? If not, what might explain these discrepancies?

Data Reduction

“Data reduction refers to the process of selecting, focusing, simplifying, abstracting, and transforming the data that appear in written up field notes or transcriptions.” The acid test is the relevance of the particular data for answering particular questions.

- Quickly peruse the data for relevant data that may be scattered throughout.
- It is important not to flatten or reduce the data that they sound like closed-ended survey responses. It will dilute the richness of the data.
- Take note of the frequency with which the different issues are raised and the intensity with which they are expressed.
- Prepare flow charts of any critical paths, decision points, or supporting evidence that emerges from the data.

Conclusion Drawing and Verification

Conclusion drawing involves stepping back to consider what the analyzed data mean and to assess their implications for the data at hand. Verification, integrally linked to conclusion drawing, entails revisiting the data as many times as necessary to cross-check or verify these emergent conclusions. “The meanings emerging from the data have to be tested for their plausibility, their sturdiness, their “confirmability”—that is, their validity (Miles and Huberman, 1994, p. 11).

- The “story line” must be shaped by the data heap.
- Step back and systematically use a variety of tactics for generating meaning, such as, noting patterns and themes, clustering intense ideas (forming categories), make contrasts and comparisons, partition variables, and subsume particulars in the general, make metaphors to reduce data, do some counting, find intervening variables.
- Note relations Between Variables:
 1. A+, B+ (both are high or low at the same time)
 2. A+, B- (A is high while B is low or visa versa)
 3. A has increased and B has increased.
 4. A has increased and B has decreased
 5. A increased first, then B increased.
 6. A increased, then B increased, then B increased some more.
- Create a logical chain of the evidence.
- Follow-up surprises or unexpected patterns in the data.
- “Tell the truth no matter how embarrassing” (Star & Strauss, 1985)
- Does the procedures I am using skillfully, artfully, and persuasively craft an argument or tell a story?
- Does the analysis flow well and make sense in relation to the study’s objectives and the data that were presented? Is the story line clear and convincing?
- Is the analysis interesting, informative, and provocative?
- Does the analyst explain how and why she drew certain conclusions, or on what basis she excluded other interpretations?
- Make Conceptual /Theoretical coherence.
- Involve more than one person in the analyses.

How Good is My Piece of Work?

1. Objectivity/ Confirmability—Do the conclusions depend on the “subjects and conditions of the inquiry” rather than on the inquirer (Guba & Lincoln, 1981)
2. Reliability/ Dependability// Audiability—whether the process of the study is stable across researchers and methods. Have things been done with reasonable care?
3. Internal Validity/ Credibility/ Authenticity—truth value. Do the findings of the study make sense? Do we have an authentic portrait of what we are looking at? Are the findings credible to the people we study and the readers?
 - descriptive—what happened in specific situations?
 - interpretive—what it meant to the people involved.
 - theoretical—concepts, and their relationships, used to explain relationships and meanings.
 - evaluative—judgements of the worth or values of actions and meanings.
4. External Validity/Transferability/Fittingness—Can the conclusions of the study have any larger import? Are they transferable to other contexts? Schofield (1990) “what is” “what may be” “what could be”
5. Utilization/ Application//Action Orientation—“pragmatic validity”. Will anyone use this information?

APPENDIX H

SAMPLE FIELD NOTE SHEET

Field notes on our planning the activities

March 14th -

Me

Bosma

How would you design a lesson if I was not here.

Meaning of relevance in lesson design

Do you find benefits of engaging students

Is lesson delivery important

Start out

How do factors change their views?

How do collective beliefs play a role in ^{catching hold} engaged situated mind

Did not get to long planned long styles to discuss roles in past

Look at material in different ways without obstacles

Have lots of feedback

Confusion has cognitive value

I will help you with ideas the whole way - he will be adjusting the lessons accordingly

- First time I taught this
- Not familiar with the material
- Brain based is a lot of work
- I teach a class for QRU for teachers and teachers look at it and say that's too much work for me to do that
It's easier to put things in front of students, especially at the high school level

because they feel they are older and more capable and they should be able to take in whatever I give them like sports

- So does this mean we have to cater them by coming up here and cutting them with our own little TV show for history class

- Don't you think we hooked much curriculum to over to do that and adding these extraneous will add confusion

- Will you come up with ideas for first few to leave with practical things

- I'm going to have a packet

M * I had to in 30 min see how
Somebody use me if they get
in 2nd hour did ten duckle
what we are doing they
normally do it
Dotted

* Nervous about success
try to

* Switch

3 Special ed kids in class

Bisma
ad you have support
try with it
ADP can check

5/20/20

Did he enjoy it

oh yes
Isolation

- Cited on kids
with the songs
started to see
with the
only

Me Make sure you always
bring it back to
their lives-

How would this
be changed if

Anna no longer
had the accident
to be

→ Instead of
- Deck and

instead of
- Deck and

→ suspicious

→ I suggested to
bring in a dummy gun

Tchart
with KKK

→ Any one up with
to be brought
two students who had to
read

boy
Attended
party
at
class.

More to
consequence
of benefits of
immigrants

Immigrants Tchart

← Kids vote to decide
what they would let in,
- would you let in why?
Then summarize their
immigrants policy

Can't
do that

APPENDIX I

CONSENSOGRAM DESCRIPTION

CONSENSOGRAM

A Classroom Content Strategy for All Content Areas

A consensogram is a quick and easy assessment tool. It can be used in all grade levels in any content area. The consensogram resembles a scattergram or simple continuum graph.

A consensogram has many uses. Here are a few”

- ❑ Assess prior knowledge before instruction
- ❑ As an anticipatory set / prompt
- ❑ Gauge understanding of a topic
- ❑ Refresh students’ memory
- ❑ Prompt for persuasive writing, discuss or debate
- ❑ Bell ringer activity / closing activity (tomorrow – same consensogram)
- ❑ Guess and check / predicting / confirming activity
- ❑ Fun warmup activity – get students’ attention

There are many benefits to using consensograms.

- ❑ Little prep, quick to generate
- ❑ Gets students moving
- ❑ Centers student focus and discussion on one hand
- ❑ Quick assessment – modify lesson when it counts...not afterward

Jot down two quick ideas how you might use a consensogram in your classroom. On my signal, share those ideas at your table.

1. Check student preferences in the school study
2. Use as an opinion meter for bell-ringers dealing with public policy issues

APPENDIX J

FIRST STUDENT OUT-THE-DOOR SURVEY

1. What parts of learning are most appealing to you?

- When the teacher talks.
- movies
- class discussions

2. What types of activities make learning fun for you?

- games
- group activities
- group discussions

3. Give examples of activities in class that hold your attention.

- group activities
- discussions
- projects

4. If you were the teacher, what would you do to make class more interesting?

- let students talk (about class)
- not as many notes
(bc no one learns from them)

5. Have the activities in class helped you to better understand the material?

- when we have class discussions, like the students get to have some input too.

APPENDIX K

STUDENT SAMPLE OF SECOND OUT-THE- DOOR SURVEY

What activity held the most situational interest? What were the characteristics of the activity that helped engage you interest?

My favorite activity was definitely the assembly line. The assembly line included the whole class. It was something we all got to work together on. Also because there was a competition between classes that always makes it funner.

APPENDIX L**CONTACT SUMMARY FORM FOR TEACHER INTERVIEWS****Interview**_____**Site**_____**Planning Session**_____**Contact Date**_____**Summative Reflection**_____**Written By**_____

1) What sense do you make of this excerpt?

2) What main issues or themes strike you?

3) What cues did you observe that provide you with evidence or lack of evidence that students are interested?

4) Did any specific aspect of the instructional set elicit more or less evidence of interest in the instructional sequence? Why do you believe this is so?

5) Does any phenomena that we have not discussed strike you as being salient, interesting, or illuminating?

6) What questions do you have about this research?

APPENDIX M

SAMPLE JOURNAL ENTRY

Qualitative Research Journal

Written by Morgan

Forward

2/6/07

This journey in my journal must begin with the truth. The integrity of this research must be anchored in truth or it will be nothing more than a wasteland of unfounded fabrication—and as such, what will that do for children?

The Denial

Sitting in my Qualitative Methods course, I was surrounded by students of the quantitative tradition. Like the professor, Dr. S, because it is done with words and not with numbers, my classmates who were sitting comfortably at the top of the class mocked qualitative work as research that is reserved for those people who are mentally weak. One classmate remarked “We know which ones in here will have to do the qualitative studies!” I was also at the top of the class, but I didn’t want to be categorized as “one of the mentally weak” if I chose to do a qualitative study—but there was a problem. In the journal articles that Dr. S passed out that were written in the qualitative tradition, I saw myself.

Before I would surrender who I was to pride, I would ask one guiding question that would make my decision for me “Dr. S, could you provide me with qualitative studies that have made a difference in policy?” He cited one where the researcher noted where the most footsteps were in a museum. He found that the tiles around the dinosaur exhibit were worn away; whereas, the tiles in the more culturally relevant places in the museum were hardly worn. Hence, the study guided the museum to place more funding in what children enjoyed. “—But what about educational policy? “ I asked. He couldn’t cite one policy decision in education that was the direct result of qualitative research. My decision was made. I would go the quantitative route.

My next problem was that after high school I had resolved that I would give up math classes for the rest of my life. In my mind, I would have rather had a root canal than ever go back to another math class. Math classes were for people whose social skills needed some “tweaking”(by the way, my faith has caused me to suspend such judgments about people). When Dr. S. forced us to choose our path and I chose the quantitative path with the intellectually pristine of the class, it was obvious that I had a big job ahead of me. I went out and bought five statistic books and statistic video tapes. Every time my students at Imlay City saw me, I was either reviewing those tapes or doing statistic problems. Early in the program, I had made it a goal to maintain a four point to model a good work ethic to my students, but I felt these quantitative statistic classes would be my demise. My tenacity to teach myself this foreign language paid off in the end, however. Dr. S always put all of the test scores on the board and made fun of the students whose scores were at the bottom

(this almost made me quit the program, but Dr. K talked me into staying). Ten pounds lighter and with much anxiety, I studied the board to see how the grades fell out. There was one perfect score of 30—that was Jerry the college math teacher I said to myself—then, it dropped to two 26's one 25. The bottom of the A's would be a 21. I looked up to the heavens and prayed for a 21. After Dr. S once again suggested that the people at the bottom were too mentally limited to be in this program, he passed out the tests. When he handed me my test, I saw that I had the 30. Our eyes met. "It's me" I softly said. "Why not you?" he responded. I started to cry. In that split second, I learned a lot about myself, and I was strongly reminded how a child feels when he/she thinks he/she can't accomplish the task and succeeds. I am now able to do my own statistics.

I have learned much in my almost thirty years of teaching, but there is still so much to learn. One thing stands out, however, is this--the essentialist view of intelligence that was born out of science societies and literary academies is a mad dog that lunges, nips, and bites. When this one view of intelligence is the king and he is the only one allowed to take a place at the table, he is a king who is drunk in his own royalty. This is why multiple intelligences and different learning modalities must be invited to the table. Dr. Kaplan has asked me "You are so qualitative—why are you doing a quantitative study?" I told him that I didn't want to take the easy way out. I lied. The dog bit me and I hid. I didn't want to be perceived as the mentally weak.

Then, I was blessed that a small woman who I am told walks as a giant in the field of phenomenology became a part of my life. The truth is, as I sit here organizing this study, qualitative studies are conducted by the mentally strong. Thank you! I feel like I came back home. It will be a lot of work, but it will best reveal what I need to know. You are a good teacher, Dr. Ebenezer!

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ABSTRACT**AN INQUIRY INTO SITUATIONAL INTEREST IN A TENTH GRADE
HISTORY CLASS: LESSON DESIGN AND IMPLEMENTATION FROM
BERLYNE AND BERGIN PERSPECTIVES**

by

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Using a *grounded theory* approach, this classroom-based empirical research study attempted to understand if using Berlyne's *collative variables* and Bergin's *situational factors* (external variables) in a learning sequence would *catch/trigger* and *hold* situational interest in students. A collative variable is a property of a stimulus that disturbs the steady state of expectancy and requires the mind to collate when presented. The collative variables used in the study are as follows: *surprise, complexity, ambiguity, novelty, change, and indistinctness*. When situational factors or external variables such as hands-on activities, social interaction, relevance, discussion, and modeling promote interest in a lesson, the interest aroused is referred to as situational interest. The goal of this research was to engage a history teacher in the translation of situational interest theory into instructional practice guided by a researcher.

The purpose of this qualitative study was to document, analyze, and interpret how the teacher and her students in a tenth grade history class experienced situational interest when Berlyne's *collative variables* and Bergin's *situational factors* were incorporated

into the design implementation of a history learning sequence consisting of thirteen lessons. This classroom-based study was conducted over a six week period. The study informants comprised of a teacher and her students. The researcher was an active participant-observer in the study. Multiple sources of qualitative data were collected from the study participants. The conversations between the teacher and the researcher while mentoring the teacher in the design and implementation of the learning sequence were audio-taped and subsequently transcribed verbatim. After each mentoring, reflective notes were recorded and added to the transcripts of audio-recordings. The teacher video-taped each of the 13 lessons she taught. On a weekly basis the researcher and teacher viewed some segments of the classroom videos and engaged in reflective talk. These talks were audio-recorded and subsequently transcribed. An interview was conducted with the teacher at the end of the study. Peer evaluation with the teacher and the transcriptionist was utilized to understand if there was a consensus in interpretation of the data. A journal was kept to log the reflections of the researcher's thoughts, ideas, concerns, feelings, interpretations, frustrations, and concerns. Two written surveys were given to the students. The first survey was given to understand which situational variables the students deemed interesting in lessons. The data from this survey was then compared to the list of situational factors provided in Bergin's work. The second survey sought to understand which activities in the learning sequence created the most student situational interest and what situational variables played the greatest role in the students' situational interest. Consensograms were used in lessons to generate frequency tables of student feedback regarding the degree of situational interest in the lessons and positive interactive experiences related. Student test scores on subject matter covered before and during the

learning sequence was collected and compared. Individual interviews were conducted with all twenty history students to garner the students' interpretation of situational interest in the learning sequence. These interviews were audio-recorded and transcribed verbatim.

All transcripts generated from audio-recordings of the interviews with the teacher and students, and conversations of lesson planning sessions with the teacher and video texts of the implementation of the individual lessons were subjected to "constant comparative" analysis consisting of open, axial, and selective coding as well as theory building. Categories and sub-categories and corresponding frequencies were characterized on a concept map. The interrelationships of the categories and supporting evidence from data reflected the situational interest of the teacher and students.

Three conclusions were made in this research. First, teacher openness and teacher change must be mediated and professionally developed in designing lessons that would create situational interest. Second, when a learning sequence was specially designed with *collative variables* and *situational factors*, there were positive changes in the students' learning behaviors and test scores. Finally, *activity features*, *affective qualities*, and *positive interactive experiences* in a learning sequence were found to be interdependent situational factors or external variables in instructional design that creates situational interest in students.

AUTOBIOGRAPHICAL STATEMENT

CHRISTINE L. MORGAN

Professional History

- August 1995 to June 2009: Taught senior social studies with an emphasis on government and economics at Imlay City High School, Imlay City, Michigan.
- August 1993 to June 1995: Taught eighth grade English at Imlay City Middle School.
- August 1984 to June 1993: Taught high school English, middle school English and speech and drama at Imlay City Community Schools.
- Sept. 1982 to June 1984: Taught pre-college composition, drama, communications and basic English to adult high school students at Mott Adult High School, Flint, Michigan.
- Sept. 1981 to June 1982: Taught fifth grade at St. Mary Magdalen School, Los Angeles, California.
- Sept. 1978 to Feb. 1981: Taught seventh grade English, social studies, and one semester of high school English at Imlay City Community schools.
- March 1978 to May 1978: Taught creative arts to academically gifted children (multi-age) at Summit Junior High, Beecher, Michigan.

Education

- May 2010: Doctor in Education, Curriculum and Instruction, Wayne State University, Michigan
- Aug. 1990: Masters of Arts in Educational Leadership, Eastern Michigan University
- May 1986: Earned post-graduate credits toward a M.A. degree in creative writing at the University of Michigan, Ann Arbor.
- May 1978: Earned a Bachelors of Arts degree at the University of Michigan, Flint.
Content areas: history, English, social sciences.

Achievements and Awards

- 2005: Keynote Speaker at New Teacher and Mentor Celebration.
- 2001: Received Governor Engler's Excellence in Education Award for teaching.
- 2000: Finalist for Michigan Teacher of the Year 2001.
- 1999: Teacher of the Year, Imlay City High School.
- 1988: Great Teacher of the Year for Lapeer County.
- 1980: Pedaled my bicycle from Los Angeles to Flint.

Presentations

- Teaching with affect: The role of service-learning in the classroom*, Central Michigan University, Spring 2009.
- How we learn is as important as what we learn*, Mott Community College, Fall, 2007, Fall 2008. Lapeer ISD, summer 2008.
- Mentor teachers...supporting New Teachers*, Lapeer ISD, Spring 2005
- Where do I "grow" from here—reflecting on practice*. Lapeer ISD, Fall 2004.