

2010

# Museum Education and Professional Development Partnerships: How the educational programs of museums enhance career goals and professional development skills in adults

Victoria A. Jensen

Follow this and additional works at: <https://scholarship.shu.edu/theses>

---

## Recommended Citation

Jensen, Victoria A., "Museum Education and Professional Development Partnerships: How the educational programs of museums enhance career goals and professional development skills in adults" (2010). *Theses*. 246.  
<https://scholarship.shu.edu/theses/246>

# **Museum Education and Professional Development Partnerships:**

How the educational programs of museums enhance career goals and  
professional development skills in adults

by Victoria A. Jensen  
Dr. Charlotte Nichols, Advisor

Submitted in partial fulfillment  
of the requirements  
for the  
Master's Degree in Museum Professions  
Seton Hall University  
May 2010

## Acknowledgements

I would like to acknowledge and thank the faculty and staff of the Master's program in Museum Profession at Seton Hall University. I am especially grateful to Dr. Petra ten-Doesschate Chu, program Director, for her dedication, guidance, hard work, and sincere kindness. I would also like to thank Dr. Charlotte Nichols, my thesis advisor, for her knowledge, direction, and patience. Thank you to Meg Wastie, for her understanding and encouragement in proofreading my thoughts and writing. I am grateful to all of the professors and my colleagues at Seton Hall University for their support, motivation, and insight in helping me to fulfill my dream and passion for museum education.

Thank you to my family and friends who continually give me confidence to challenge myself professionally and personally. I especially want to acknowledge and thank my parents and grandmother for making education a necessity and value in my life.

I dedicate this thesis to Chris and Caren; your unconditional love and support have and will always give me comfort, courage, and strength. I am proud of both of you and blessed to be your mother.

## TABLE OF CONTENTS

Introduction.....	3
Chapter 1:	
Learning and Educational Theories	
Introduction to theories.....	6
The Role of Museums in Facilitating Learning.....	6
Theories of Learning:	
Piaget.....	8
Vygotsky.....	12
Dewey.....	15
Constructivist.....	17
Gardner.....	20
Visual Thinking.....	23
Educational Theories.....	26
Chapter 2:	
Case Studies	
Introduction to Case Studies.....	31
Case Study 1 Museum of Toledo and the University of Toledo.....	31
Case Study 2 NRHC and Texas Tech University.....	36
Case Study 3 YCBA and Yale University Medical School.....	43
Case Study 4 The Frick Collection and Weill Cornell Medical College and The Frick Collection and NYPD.....	50
Conclusion.....	59
Chapter 3:	
Museum Professional Development Partnerships	
Implementation of other Museum Professional Development Programs.....	62
Chapter 4:	
Conclusion.....	68
Bibliography.....	71

## **Introduction:**

Museums have the ability to engage visitors with new experiences that inspire and motivate learning. The different environment, hands-on experience, and the social interaction museums offer increase opportunities for visitors to learn and gain knowledge.<sup>1</sup> Through offering different approaches to facilitate learning and enhance professional skills in their careers, museums, their collections, and staff are valuable resources for heightening learning, and knowledge, and strengthening career ambitions and skills of university students, educators, and other professionals. Museums have cultivated partnerships in order to create situations that will serve to assist learning to further the career growth and aspirations of university students and professionals.

Educational programs at museums have been instrumental in and documented for promoting the teaching skills of education majors and teachers. Programs outside the classroom have proven to attract the interest of educators through focusing on different approaches to expand learning that will heighten their professional skills. Museums and museum educational programs inspire “hands-on” and “minds-on” to engage participants in “scaffolding” their prior knowledge to challenge, to learn and to gain new knowledge with the objective for educators to learn new and/or different approaches to enrich their teaching skills in the classroom.<sup>2</sup> Museums and educational programs strengthen

---

<sup>1</sup> Learning refers to new experiences that change the thinking (personal insight) of individuals. Knowledge refers to learning as personal, contextual, and cumulating over time. See John H. Falk, Lynn D. Dierking and Susan Foutz, *In Principle, In Practice* (MD: AltaMira Press, 2007), xix, 59-62.

<sup>2</sup> George E. Hein, *Learning in the Museum* (New York: Routledge, 1998), 2 and John H. Falk, Lynn D. Dierking, *Learning from Museums, Visitor Experiences and the Making of Meaning* (MD: AltaMira Press, 2000), 43-44.

educators' involvement in the community and aid in building civic engagement activities outside of the classroom for their students.

The four case studies presented demonstrate the successful partnerships museums have cultivated supplement the learning intentions of students and professionals. The partnerships museums have with institutions and professionals have been selected for their approach and the theories of learning they apply. They are:

- At the University of Toledo, Professor Katherine Danko-McGhee strengthens her education major students' studies with a partnership educational program at the Toledo Museum of Art. The program gives her students an opportunity to practice hands-on teaching with children through art appreciation (Case Study 1).
- Professor Reese Todd from Texas Tech University improves the teaching skills of her graduate education students at the National Ranching Heritage Center with practice in lesson-planning and activities to engage children in civic-oriented topics. This program motivates graduate students to incorporate civic involvement in their future careers as teachers (Case Study 2).
- At the Yale Center for British Arts, museum educators lead an observational and visual literacy art program that builds and deepens the diagnostic and doctor-patient relationship skills of medical students at Yale University Medical School (Case Study 3).
- When she was Director of Education at the Frick Collection, Amy Herman developed an art observational program that motivates participants to improve their visual analysis and critical thinking competence. This program emphasizes building

visual and verbal literacy skills of medical students and law enforcement officers. She continues to implement similar programs conducted presently at the Metropolitan Museum of Art and the Smithsonian Institute (Case Study 4).

Participants in case studies 3 and 4 are encouraged to engage in observing, describing, discussing, and interpreting what they see and do to make conclusions using the museums' collection. Follow-up studies of participants in observation programs such as the aforementioned case studies confirm that students have felt more confidence and shown more discernment in visual analysis and critical thinking skills after they have participated in the programs. Medical students have improved their diagnostic abilities and empathy for doctor-patient relationships by developing their observational and verbal literacy skills. Law enforcement officers have redefined and intensified their ability of observation and interpretation with assessing and solving crimes in their work.

Through involvement in these extra-curricular experiences, participants heighten their learning potential. The overall museum experience fosters thought and reflection to enhance new knowledge that will be remembered after the museum visit. The results of the partnerships show the value museums have in increasing the learning potential and needs of professionals and students.

## **Chapter 1: Theories of Learning and Educational Theories**

Many learning and educational theorists agree that learning is enhanced through extra-curricular stimuli. The following theories define and explain how, through the theorists' research, children and adults learn. The learning theories indicate how to stimulate learning with proven ideas and techniques. Although learning is personal, it requires an engaging and thought provoking experience. The educational theories include research and ideas on creating and supporting learning opportunities outside the classroom setting. Merging and utilizing these theories establish a foundation for encouraging learning in all visitors to museums.

All of the educators involved in the programs presented depend on a variety of educational philosophies and learning approaches to motivate learning in the museum setting. Professor Reese Todd at Texas Tech University relies on the educational research of Rahmia Wade and Ernest Boyle to teach her students about the importance of civic involvement activities in their careers as teachers. Linda Friedlaender at Yale Center for British Arts demonstrates the value of collaborating with other fields of study to build and improve observation and visual literacy skills in students. At the University of Toledo, Professor Katherine Danko-McGhee utilizes the learning theories of Piaget and Vygotsky to help her students identify the cognitive development of children.

### **The Role of Museums in Facilitating Learning**

Museums continually strive to engage and enlighten their audiences. They encourage all visitors to observe and attain new perspectives to gain knowledge from the museums' collections, rich settings, and educational programs. Museum settings offer hands-on experiences through providing visitors with opportunities to observe and/or



manipulate material and to be presented with new ideas. Hands-on sensory opportunities encourage the scaffolding of previous knowledge with new visual encounters and social interaction to inspire learning. Visitors--and especially specifically-formed groups of visitors--increase their learning when they can actively construct new ideas in their own minds. Motivating participants to construct new ideas with concrete objects and social interaction increases their ability to retain the new information and to construct personal relevant knowledge.

Museum collections engage sensory perceptions, personal feelings, responses and reactions to stimulate change in participants' personal learning and overall knowledge.<sup>3</sup> Manipulation and viewing of objects motivates participants to think, create and connect with the entity's history and their own lives. Participants relate the object-learning experience with their previous knowledge to heighten awareness about the relationship the object has in the past, present and future. The learning strategy of using concrete objects connects participants to the physical entities and how they can affect participants' personal views and understanding with other people, places, history and concepts.<sup>4</sup>

The challenge museums have is to provide meaningful situations that encourage visitors and specifically-formed groups of participants to think, to learn, and to increase their knowledge. Education pioneer, John Dewey felt that "the mind needs experiences to grasp and hold onto perceptions."<sup>5</sup> Perceptions can be described as the outcome a

---

<sup>3</sup> Dorothea Lasky, "Learning from Objects: A Future for 21st Century Urban Arts Education" (*Penn GSE Perspectives on Urban Education*, 2009), 73.

<sup>4</sup> See Albany Institute of History of Art Website for educational programs that use object-based learning strategies, 25 April 2010 <http://www.albanyinstitute.org/mli/objectlearning.htm>

<sup>5</sup> John Dewey, *Democracy and Education* (KS: Digireads.com, 2005), 86.

person has in encountering new information and the knowledge the mind acquires through that experience. Each new experience may lead a person to a moment of revelation about and/or connection to thinking and reflecting about the encounter.

Museum professionals employ various learning development theories and educational theory styles to understand and respond to visitors' personal needs and desires in relation to learning in the museum. Thought and reflection enable individuals to discover connections between actions they have performed and their consequences. Participation encourages the mind to be actively interested in new learning opportunities. Thinking and reflection help individuals make conclusions that will lead to memory retention and new knowledge gained. Encouraging participants to be engaged and to create personally-constructed conclusions increases the probability of learning in museums. Therefore, the role of museums in learning is to offer participants opportunities to manipulate, to explore, to socially interact, and to be engaged with new materials and ideas. These opportunities engage participants' interest and encourage thinking and learning with different learning approaches. The following theorists' approaches are vital to understanding how people learn.

#### Theories of Learning:

##### *Jean Piaget*

Jean Piaget (1896-1980) was a Swiss scientist, biologist, psychologist, and philosopher whose work centered on children's cognitive development. Museum educators utilize Piaget's work in engaging children with objects to inspire learning opportunities. His main objective in researching and studying developmental psychology was to explain how knowledge grows. His interest in studying the development or origin

of knowledge became known as Genetic Epistemology.<sup>6</sup> Genetic Epistemology uses “the study of biological contributions to intelligence with the theoretical study of knowledge.”<sup>7</sup> Unlike child psychology, genetic epistemology includes the disciplines of psychology, logic, mathematics, biology, and, physics in intellectual development from childhood to adulthood. By studying the cognitive development in children from the period of infancy to their development of language fluency, Piaget observed and studied how children learn. He was able to observe that children learn differently from adults and studied the reasoning processes that children follow. Using children’s “spontaneous comments,” he was provided with valuable information and clues to understand children’s thinking and to theorize on the growth of knowledge.<sup>8</sup> His theory was “that the growth of knowledge is a progressive construction of logically embedded structures superseding one another by a process of inclusion of lower, less powerful logical means into higher and more powerful ones up to adulthood.”<sup>9</sup> He concluded that children's logic and ways of thinking are initially different from those of adults.

Piaget employed open-ended questions to follow children’s trains of thought. He was not looking for right or wrong answers but for the children’s “logic and reasoning for their answers.”<sup>10</sup> Piaget’s research found that children’s acquisition and understanding of mathematical concepts (which included space, time, and numbers) are less dependent on

---

<sup>6</sup> William Crain, *Theories of Development* (NJ: Prentice Hall, 2000), 111.

<sup>7</sup> Dorothy G. Singer and Tracey A. Revenson, *Piaget Primer* (New York:Plume, 1996), 8.

<sup>8</sup> Singer et al, 1996, 5, 6, 8.

<sup>9</sup> Piaget Society Website 10 Apr 2010 <http://www.piaget.org/aboutPiaget.html>

<sup>10</sup> Singer et al, 1996, 6.

language and more dependent on tasks. Young children lack the ability to think abstractly and to express their thoughts verbally. They are dependent on what they see, and their reasoning is without systematic or logical processes.

Piaget used concrete objects to supplement his conversational methods with children, to observe how they manipulated and described the objects. He made conclusions about how children's thinking can be formed and documented. Piaget believed "children learn about the world through active engagement with objects."<sup>11</sup> In an environment, such as a museum, active engagement with objects heightens sensory perceptions in children, and enables them to think and express their ideas. With each new experience, children's cognitive development increases by successive additions to their previous experiences. Traditional instructional learning methods lack the experimentation and imagination that object-learning opportunities offer. Children are in control of connecting previous learned experiences with new ideas and understandings through the manipulation of objects. Objects stimulate learning and help children to retain new concepts for further knowledge after the experience.<sup>12</sup>

Children use environments such as schools and museums to learn, but it is the children, "not the external environment, who build new cognitive structures."<sup>13</sup> Cognitive development is an "active construction process," through which children use their internal maturation and external experiences to gain knowledge, thereby increasing

---

<sup>11</sup> Singer et al, 33.

<sup>12</sup> See Hein, 1998, 21-22 and Lasky, 2009, 75.

<sup>13</sup> Crain, 2000, 114.

their cognitive development.<sup>14</sup> They learn to adjust to changes in their environment by assimilation and accommodation. Assimilating to new experiences involves taking in new information by joining it with previously conceived knowledge. Accommodating to new experiences involves changing or “revising the old plan to fit the new information” into their environment.<sup>15</sup> Piaget refers to this adaptation or learning process in children as a *schema*, which is “a simple mental image or pattern of action, form of organizing information that a person uses to interpret the things she hears, smells, and touches. A schema organizes perceptions and behaviors in the same way a desk organizer files supplies.”<sup>16</sup> Children move to the higher stage of cognitive development as they learn more elaborate ways of responding to more complicated schema.

In determining the stages of cognitive development in children, Piaget attached age level ranges to each stage. He stressed that new experiences and cultural influences affect the assessment of children’s stages of cognitive development (see Table 1).<sup>17</sup> The levels and stages explain his theory about knowledge acquisition. Children reach these levels at different rates, and chronological age is not necessarily a guideline to follow in determining mental development. Piaget believed that children are continually

---

<sup>14</sup> Crain, 2000, 114.

<sup>15</sup> Singer et al, 1996, 15.

<sup>16</sup> Singer et al, 1996, 17, 28.

<sup>17</sup> Singer et al, 1996, 19-26. Jean Piaget and Barbel Inhelder, *The Psychology of the child* (New York: Basic Books, 2000), 3-10.

### **Piaget's Four Stages of Cognitive Development**

**Sensory-Motor** (ages birth through two) learns about oneself and the environment; knows the difference between self and objects; recognizes that object still exists even when not present.

**Pre-operational** (ages two through seven) uses language to represent objects and images; thinking is egocentric; distinguishes objects by one feature, for example, by color or shape.

**Concrete Operation** (age seven to twelve) thinks logically about events and objects; distinguishes objects by several features and puts them in categories by size, for example.

**Formal Operation** (ages twelve to adult) thinks logically about abstract possibilities and attempts possible outcomes for future events. Plans and tries different possibilities for future events.

Table 1

exploring and manipulating in order to make sense of their environment. They are at work creating new and more complex ways for dealing with their environment.

#### *Lev Semenovich Vygotsky*

Lev Semenovich Vygotsky (1896-1934) was a Russian psychologist who studied the works of Jean Piaget and recognized the value that his theory had in children's cognitive development. Vygotsky's work focused on the role that the external or the social-historical environment has on cognitive development. He believed that to understand human beings, one had to focus on the context of the social-historical environment.<sup>18</sup>

---

<sup>18</sup> Crain, 2000, 214.

Vygotsky believed in the “natural-line” of children developing at their own pace. At approximately the age of two, children begin to develop their “social-historical line,” which connects the external surroundings of past and present with their natural intrinsic knowledge.<sup>19</sup> Unlike Piaget, Vygotsky believed the “natural-line” and the “socio-historical line” acted together on children’s overall cognitive development. Vygotsky and Piaget both believed that children do not develop in isolation and that external cultural influences have an impact on children’s thinking and overall development. Piaget believed the “natural-line” development within children has more impact than the external, cultural influences or “social-historical line” development has in the overall development of children.

Vygotsky theorized that reaching the “highest levels of thinking – the levels of purely abstract of theoretical reasoning,” requires instruction in conceptual tools handed down by cultures, through writing, through math, and through other kinds of abstract concepts.<sup>20</sup> Museums offer opportunities to introduce learners to abstract concepts with visual, written, spatial and numerous other stimuli. Instruction moves the mind forward, interacts with the child’s development and creates new directions for learning. Vygotsky felt “teachers should not present tasks that are so far ahead of the child that the child can only solve them with the teacher’s assistance.”<sup>21</sup> Teachers should introduce activities that stimulate, challenge, and engage children to enable them to make discoveries and solutions on their own. Instruction “should arouse the child’s vital interests and

---

<sup>19</sup> Crain, 2000, 214.

<sup>20</sup> Crain, 2000, 219, 232, 235.

<sup>21</sup> Crain, 2000, 242, 243.

correspond to the child's natural way of learning."<sup>22</sup> Similarly, Piaget's felt "if teachers [adults] want children to genuinely grasp concepts, they must give children opportunities to discover them on their own."<sup>23</sup> Piaget supported teachers' presentation of new concepts that were challenging and stimulating for children to grasp in order to push children's minds forward. Piaget and Vygotsky both believed that teachers should develop curricula that stimulate discovery and learning in children.

Vygotsky's theory discusses a "distance [Zone of Proximal Development] between the actual development level as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance or in collaboration with more capable peers."<sup>24</sup> "By focusing on the activities that children can accomplish with assistance, the zone reveals those abilities that are just beginning to develop."<sup>25</sup> The ZPD shows what children can do today with assistance and what they can do tomorrow without assistance. Children take what they already know (previous knowledge), and scaffold that knowledge with what they are capable of learning (new knowledge). This scaffolding sets a new goal for the children. It pushes the children "to think more abstractly than they ordinarily would."<sup>26</sup> Teachers, museum educators, parents, and peers can be viewed as valuable resources in the scaffolding of previous knowledge by introducing new learning experiences to the overall cognitive

---

<sup>22</sup> Crain, 2000, 243.

<sup>23</sup> Singer et al, 1996, 18 and Crain, 2000, 232.

<sup>24</sup> Crain, 2000, 236.

<sup>25</sup> Crain, 2000, 236.

<sup>26</sup> Crain, 2000, 234.



development. Scaffolding can include questions, cues, or other learning supports. Adults as well as children benefit from scaffolding previous knowledge with new learning experiences that challenge and push their minds to gain new knowledge.<sup>27</sup>

Vygotsky felt that humans use psychological tools or “signs” to aid in their thinking and behavior.<sup>28</sup> He argued that to understand human thinking educators need to examine the significant and various “signs” that cultures provide. Speech is the most important “sign,” which allows humans to think about and reflect upon the past and make plans for the future. Speech enables children to “participate intelligently in the social life” of their thinking.<sup>29</sup> The ability to talk to oneself can be viewed as thinking with words, which contributes to the individual’s power of thought and reflection. This belief pointed developmental psychology in a new direction.

### *John Dewey*

John Dewey (1859-1952) was philosopher and educational theorist. His work has been cited as particularly important to museum education. Dewey believed that “all genuine education comes through experience” and not all experiences are “genuinely or equally education.”<sup>30</sup> Education “depends upon the quality of the experience that is had.”<sup>31</sup> Dewey’s definition of the nature of experience centers on two features, active and passive experience. The active experience is what individuals do to a situation, such as

---

<sup>27</sup> John H. Falk et al, *In Principle, In Practice*, 110 and 219.

<sup>28</sup> Crain, 2000, 218

<sup>29</sup> Crain, 2000, 221.

<sup>30</sup> Ted Ansbacher, “John Dewey’s Experiences and Education: Lessons for Museums.” (*Curator*, 1998), 38.

<sup>31</sup> Ansbacher, 1998, 38.

the active interaction individuals have with objects in museum historical period rooms.<sup>32</sup> What are their impressions of a time period that they may not be familiar with? The participants are given the opportunity to become visually familiar with a time period, offering the opportunity for immediate responses of like or dislike about the experience. The passive experience is what the experience does to the participants. After viewing the period rooms, participants become familiar with and gain knowledge about the cultural history and lifestyle of that time period. This feature has a delayed aspect: the experience may be influential immediately in their personal learning, and it may or may not influence future experiences and learning. The experience of viewing the period rooms can lead to understanding and more knowledge gained from the experience over time.

Dewey stated that “to learn from [an] experience is to make a backward and forward connection between what we do to things and what we enjoy or suffer from things in consequence.”<sup>33</sup> Dewey contended that the mind needs opportunities to connect with and keep these perceptions. Perceptions are the new information and knowledge that the mind is acquiring through experiences. The experience causes individuals to think and reflect on the experience. Thought and reflection enable a discovery and a connection between something individuals did and the consequences. Similar to Piaget, Dewey agreed that learning includes cognitive changes that affect individuals, and tasks that challenge the mind.

---

<sup>32</sup> The Tenement Museum in New York conducts guided educational programs that engage groups of visitors with the cultural historical life in the late 19th to early 20th centuries in New York City. See their Website for more information 18 April 2010 <http://www.tenement.org/>

<sup>33</sup> Dewey, 2005, 83.

Dewey, Piaget, and Vygotsky all agreed that “the active participation of the mind [is] in learning, and recognition that the process of learning is not a simple addition of items into some sort of mental data bank, but a transformation of schemas in which the learner[s] play an active role and which involves making sense out of a range of phenomena presented to the mind.”<sup>34</sup> Piaget and Dewey agreed that cognitive development is cumulative and that experience has significance in learning, but unlike Piaget, Dewey argued that learning is not mostly cognitive; he believed “knowledge depended more on practical experience and the application of ideas to action, than to a verbal description of truth.”<sup>35</sup>

Dewey strongly felt that museum experiences have the power to change people. An educative experience in a museum must be “hands-on” and what he referred to as “minds-on.”<sup>36</sup> The museum experience must be engaging with interesting activities, but it must be structured to be educational, to facilitate learning for visitors. Dewey believed that the end result is to achieve good education “by whatever means it can be achieved, and not [by] adherence to a name or slogan or an ‘ism’.”<sup>37</sup>

### *Constructivism Theory*

The theory of Constructivism is a broad concept that includes the fields of philosophy, psychology and science. Jean Piaget’s work on children’s learning development is often referred to as the beginning research on defining and expanding on

---

<sup>34</sup> Hein, 1998, 22.

<sup>35</sup> Hein, 1998, 18.

<sup>36</sup> Hein, 1998, 2.

<sup>37</sup> Ansbacher, 1998, 38.

this concept. The Constructivist Theory asserts that individuals essentially drive their own learning. Museums are a valuable resource for exposing and encouraging participants to be in control of their learning. Piaget, Vygotsky and Dewey have all put forth that individuals are in control of their own knowledge through personal experiences. Individuals have different cultural backgrounds, needs, desires, and prior knowledge. All of these differing perspectives or factors need to be considered in facilitating the drive to learn.

Constructivists believe that hands-on and minds-on are paramount to building and expanding learning. Museum educators offer sensory hands-on approaches to engage participants' minds with opportunities to learn. Individuals do not just absorb new information; they must be engaged to construct new knowledge. They use their perspectives and prior knowledge to help them "reorganize and create understanding and the ability to learn as they interact with the world."<sup>38</sup> The thoughts, reflections, and the conclusions learners construct in connection to an experience have to come from within the individuals. The approach and process learners employ is personal to them. Learning has meaning when it is clear to learners what they have processed. Finally, learning takes time; it is a continuing process.<sup>39</sup>

The Constructivism Theory puts forth that learners are not all the same and that their conclusions will not all be the same. Learners create their own impressions, perceptions, and conclusions from meaning-making experiences. Motivating participants

---

<sup>38</sup> George Hein, "The constructivist museum", in *The Educational Role of the Museum*, Eileen Hopper-Greenhill (ed) (New York: Routledge, 1994), 75.

<sup>39</sup> Falk, et al, *In Principle, In Practice*, 59, 102 and Hazel Moffat and Vicky Woollard, *Museum & Gallery Education* (CA: AltaMira Press, 1999), 176.

to explore and compare what they know with what they see, think and conclude heightens their awareness. Museums acknowledge participants' constructed conclusions for making sense, but do not judge the validity of those conclusions. Acknowledgment, for museum educators however, inspires and empowers participants to experiment and seek more meaningful learning experiences.<sup>40</sup>

John Dewey and the Constructivists agree that museums are ideal learning environments. Museums allow visitors to choose what interests them, to explore at their own pace, and to interact with others. Museums can challenge and expand visitors' ways of understanding to gain new knowledge and understanding. To stimulate learning in museums, the focus must be on the learners and not on the material to be learned. Museum educators and teachers must work to provide environments that encourage and stimulate learning in order to engage them in meaningful new learning experiences..<sup>41</sup>

Constructivists believe in three basic ideas necessary for learning in museums. First, educators must acknowledge with sensitivity and respect the perceptions, cultural backgrounds, and prior knowledge learners have. This sensitivity will increase learners' comfort in participating in new experiences and constructing new knowledge. Second, educators need to engage visitors' interest and motivate active participation with hands-on and minds-on activities to encourage learning. Third, the environment and/or program must be designed to make it understandable and challenging to visitors physically, socially and intellectually. The experience must empower visitors to learn and seek more experiences to gain new knowledge.

---

<sup>40</sup> Hein, 1998, 34-35.

<sup>41</sup> Falk, et al, *In Principle and In Practice*, 84 and Hein, 1998, 39.

## *Howard Gardner*

Howard Gardner, born in 1943, is known as an educational researcher and an educational psychologist. He strongly believes that museums are valuable and important learning environments because they offer many sensory opportunities that will attract learners of different styles. Gardner developed the Multiple Intelligence Theory. This theory characterizes different types of intelligences and proposes that people can excel in one or more. His view of intelligence comes from reviewing studies of cognitive development in normal children, as well as prodigies, children within the autism spectrum, and people who had suffered brain damage. He studied these sources and others to identify intelligence abilities. His work found that these intelligences are independent of each other and that people have the potential to develop multiple intelligences over their lifetime. The Multiple Intelligence Theory suggests that it is important for people to nurture and develop more than one intelligence type in order to augment their lifelong learning abilities. The theory promotes different cognitive styles for learning and understanding.<sup>42</sup>

In 1983, he outlined different styles or types of intelligences (see Table 2).<sup>43</sup> His definition and opinion of intelligence is different from the traditional definition of “the

---

<sup>42</sup> L. Darling-Hammond and K. Austin, *The Learning Classroom* (online, 2003), 74. John H. Falk and Lynn D. Dierking, *The Museum Experience* (Washington, D.C: Whalesback Books, 1992), 101 and Falk, et al, *In Principle, In Practice*, 52.

<sup>43</sup> Originally Gardner defined seven intelligences. Since 1983, he has structured an eighth intelligence type and is working on identifying more intelligence types. Table 2: Chart information taken from Darling-Hammond, et al, 74-75 and Jeanne Ellis Ormond, *Educational Psychology* (NJ: Pearson, 2008), 151.

ability to gain and apply knowledge.”<sup>44</sup> He defines intelligence as “the ability to solve problems, or to fashion products, that are valued in one or more cultural or community settings.”<sup>45</sup> He defines intelligence as areas in which individuals may show attributes and potential. Gardner contends that accomplishing most tasks involves applying and practicing more than one of these intelligence types. His theory puts forth that cognitive development abilities are “not fixed and pre-determined; they change and develop over time.”<sup>46</sup> Gardner’s theory promotes the concept that educators are in the position to help learners to use and develop many of the intelligences.

Museum professionals can improve visitors’ learning experiences by using these learning styles to understand and respond to visitors’ personal needs and desires. Gardner suggests, “that a more museum-like model for schools, one that includes content experts and apprenticeships with them, might be a better model for teaching and learning.”<sup>47</sup>

Encouraging multiple intelligence types is only an entry point to learning and understanding, not the goal. Museum educators can use these styles to improve their participants’ opportunities to consider and reflect about an idea in more than one way. Thinking about concepts or ideas in different way helps participants to remember them. Museums offer hands-on sensory opportunities for participants to manipulate and explore new materials in order to engage interest and support thinking and learning with different learning approaches. By offering environments in which to explore and attain new ways

---

<sup>44</sup> The definition of intelligence, *Oxford English Dictionary* (Oxford: Oxford University Press, 2006), 362.

<sup>45</sup> Darling-Hammond et al, 2003, 74.

<sup>46</sup> Darling-Hammond et al, 2003, 75-76.

<sup>47</sup> John H. Falk et al, *The Museum Experience*, 102-103.

of learning, museum programs empower participants with new experiences and knowledge to employ in their careers and personal lives. The goal is to have participants “connect with content and express their understanding in different ways.”<sup>48</sup> Museums help in the purpose of learning and understanding by offering different approaches to engage participants, whatever their dominant intelligences are.

---

<sup>48</sup> Darling-Hammond et al, 2003, 75-76, 78-79 and Leah Melber, “Museums and Teacher Professional Development in Science: Balancing Educator Needs and Institutional Mission,” *Science Educator*, 2007, 38.



## Howard Gardner's Eight Multiple Intelligence Types

### **Linguistic:**

Have the ability to use language more effectively. Communicate in speaking, writing and reading. Writers, journalists, and people who tell stories are examples of this type.

### **Logical-mathematical:**

Uses logical reasoning and have an affinity for patterns in shapes and numbers more. Mathematicians, scientists, and philosophers are examples of this type.

### **Spatial:**

Uses visual images and touching to understand and express their reasoning. Doctors, athletes and dancers are examples of this type.

### **Bodily-Kinesthetic:**

Have good coordination and gross motor skills. Use their bodies to create and solve problems. Doctors, athletes, and craftspeople are examples of this type.

### **Musical:**

Exhibit ability to create, comprehend and appreciate music. Have an affinity for rhythm and sound patterns. Musicians and poets are examples of this type.

### **Interpersonal:**

Have sensitivity to and awareness of others' feelings and intentions. Teachers, parents, and salespeople are examples of this type.

### **Intrapersonal:**

Aware of own emotional state and accept their strengths and weaknesses more. Use their understanding of themselves to help others with their own feelings. Religious leaders and therapists are examples of this type.

### **Naturalist:**

Show an affinity for their environment. Have an awareness of patterns in nature and differences among living things and natural objects. Farmers and archaeologists are examples of this type.

Table 2

### *Visual Thinking Theory and Visual Thinking Strategies*

Visual Thinking Strategy (VTS) was named in the later twentieth century to honor Rudolf Arnheim's work in Gestalt psychology that had led him to find a connection between "visual perceptions" (what we see) and "visual thinking" (what we think).<sup>49</sup>

---

<sup>49</sup> "VTS Research and Theory," *VUE*, 2009, 2. Gestalt Psychology theory looks at the human mind and behavior as whole. The whole of anything is greater than its parts. Perceptions of a person are explained in the present condition and previous conditions are not involved, from Douglas H. Fryer, Edwin R. Henry and Charles P. Sparks, *General Psychology* (NY: Barnes and Noble, 1954), 165-167.

Arnheim felt that “identifying what we see is as an act of cognition.”<sup>50</sup> Visual Thinking Theory supports Piaget’s writings that children learn when they are ready. Children may be exposed to new information that is above or beyond their ability to understand, but can only process new knowledge independently when they are ready. Learning is accomplished in increments that are connected to children’s developing interests and abilities. Arnheim, Piaget, and Vygotsky believe learning happens from interactions with the environment. Visual Thinking Theory and Vygotsky stress the value of social interaction with other people in the building and expanding of new knowledge gained. Visual Thinking Theory supports Vygotsky’s writings about the relationship between language development and children’s thinking. Arnheim found through his experiments that thinking requires language. Children must develop their speech to think and understand new complex ideas. Visual Thinking encourages talking and discussion as a tool to strengthen the student’s abilities to process thought.

In the 1980s, Abigail Housen, a cognitive developmental psychologist, started to expand on Arnheim’s Visual Thinking Theory with her work in aesthetic thought. She focused her research on what people think and say when they look at art. She documented the differences between people with experience and those with no experience in art. She wanted to understand the changes in thinking that occur in people when experiencing art over time. Her collected observations demonstrated that both experienced and less experienced viewers had rich comments and observations that included their “associations, memories, facts and emotions.”<sup>51</sup> These observations

---

<sup>50</sup> “VTS Research and Theory,” 2.

<sup>51</sup> “VTS Research and Theory,” 2.

showed a connection between developing critical and creative thinking and experiencing art education. She contends that growth in communication, visual literacy and thinking would not be the same if a class of objects other than works of art were used because art contains more than one right answer and allows for more interpretations that are of significant value and meaning for the viewers' overall learning experiences.

Her work identified five patterns of thinking that occur in people when looking at art. These five stages are referred to as the Aesthetic Stages (see Table 3).<sup>52</sup> Age is not a determining factor of what stage a person achieves. These stages are helpful for determining the learning development of children as well as adults. Participants' exposure to and growth in aesthetic thought development happen over time.

<b>Visual Thinking Aesthetic Stages</b>	
<b>Stage 1:</b>	Viewers use their senses, memories, and personal associations to make concrete observations.
<b>Stage 2:</b>	Viewers construct a framework for looking at art. They use their personal perceptions, knowledge, and values to make judgments.
<b>Stage 3:</b>	Viewers employ art historical facts to make personal assessments. The meaning and message of the artwork are associated with what they can explain and logically rationalize about the work.
<b>Stage 4:</b>	Viewers look for a "personal encounter" with the artwork. They seek to let the artwork's meaning and message be explained through careful examination and contemplation.
<b>Stage 5:</b>	Viewers take their personal contemplations and connect the artwork with their environment and universal issues.

Table 3

<sup>52</sup> "VTS Research and Theory," 4.

In 1995, Housen and veteran museum educator Philip Yenawine co-founded Visual Understanding in Education (VUE).<sup>53</sup> The mission of VUE is to nurture visual literacy, thinking, critical analysis, and communication through viewing art. VUE employs Visual Thinking Strategies (VTS) teaching methods to motivate learning in viewers through art. VUE offers VTS teaching methods to all educators to intensify students' participation and self-confidence in learning. The objective is to enhance educators' teaching skills and goals, which in turn benefits students' learning. VTS believes that the role of both classroom and museum educators is to be facilitate learning not be sources of new information. They motivate participants to observe, think, and verbally articulate their learning through viewing art and other subject materials in order to build confidence in observational, visual literacy, reflection, and communication skills. Educators stimulate learning by employing open-ended questions, talking and discussions among their participants. The sharing of personal knowledge, feelings and attitudes enables the participants to expand their learning potential.<sup>54</sup>

#### Educational Theories:

Ernest Boyle and Rahima Wade have researched and written extensively in the field of education and career development of education majors, higher education students and the responsibilities of the professoriate. Texas Tech University professor Reese Todd

---

<sup>53</sup> Philip Yenawine, former director of education at MOMA and other institutions, has extensive expertise in museum education. VUE is a non-profit educational organization, offering numerous VTS teaching method workshops and programs using art to teach visual literacy, thinking and communication skills. See the VUE website for more information about Yenawine and Housen 11 April 2010 <http://www.vtshome.org/>.

<sup>54</sup> "Understanding the Basics," *VUE*, 2001, 1.

(Case Study 2) has been utilizing and referring to these educators' writings for the planning and execution of her program at the National Ranching Heritage Center and for establishing goals at the South Plains Education Resource Collaborative.

Ernest Boyer (1928 -1995) was considered an influential spokesperson on higher education in the United States. His "Scholarship of Engagement" is a model for the professoriate of higher education, containing four responsibilities for the professoriate to employ and integrate (see Table 4).<sup>55</sup> Boyer contends that college campuses are not "isolated islands, but staging grounds for action," and universities can inspire the aspirations of "intellectual and civic progress in our country."<sup>56</sup> Boyer's model puts forth that educators can create and stimulate learning opportunities for themselves and their students. Engaging in learning outside the classroom supplies an opportunity to practice what has been taught inside the university. Museum settings and programs are excellent sources for furthering learning outside the classroom.

**The "Scholarship of Engagement" Model**

<b>Discovery</b>	Universities conduct research
<b>Integration</b>	The disciplines of academia and outside the university overlap and should be responsible for creating interdisciplinary conversations
<b>Sharing of Knowledge</b>	Communication with peers and future scholars
<b>Reconsidered</b>	Reflection to ensure that knowledge is more useful and authentic

Table 4

<sup>55</sup> Ernest L. Boyle was Chancellor of the State University of New York, United States Commissioner of Education, and was President of the Carnegie Foundation for the Advancement of Teaching.

<sup>56</sup> Ernest L. Boyer. "The Scholarship of Engagement," *The Journal of Public Service and Outreach*, 1996, 148.

The research of Rahima C. Wade, Ed.D, a social studies professor at the University of Iowa, focuses on the importance of community service-learning and civic engagement. Her research and findings concentrate on social studies teachers and their developing a commitment to the importance of community service. This commitment involves assisting pre-service education students to “learn the values of engaging in long-term efforts to revitalize our democratic society and the skills to respond compassionately to those whose daily needs cannot wait for societal transformation.”<sup>57</sup> Wade has strongly stressed that educators are in the position of developing active citizens. She cites the educational theories of John Dewey and Ernest Boyer to explain how facilitating community service projects deepens career development and continued learning in future educators. Programs outside the classroom can be instrumental in furthering the potential aspirations of students in their future careers as educators.

Universities need to offer education major students social studies research methods courses that focus on and explore teaching, training, and hands-on service projects that will demonstrate the value of community engagement. Wade points out that many education major students have a traditional view of teaching strategies. Their view comes from their personal schooling experience that has had very little community service-learning to foster a commitment to civic engagement. She that asserts hands-on experience and reflecting on community service-learning projects will change this dated view. This will intensify students’ awareness, skills and commitment to incorporating community service learning projects in their future profession as teachers.

---

<sup>57</sup> Rahima C. Wade. “Developing active citizens: Community service learning in social studies teacher education,” *The Social Studies*, May 1995, 123.

Wade lists the benefits that education students acquire from participating in community service-learning activities. They are “learning skills and developing values that can be applied to their future teaching.”<sup>58</sup> The education students also learn how to prepare lessons and teach future students how to deal with potentially awkward feelings that occur in connection with community learning projects. The education students additionally learn how to set reasonable goals that will motivate and empower their future students to make a difference in their community. In making reasonable goals, the students are better prepared to guide their future students’ awareness of world issues that will affect them and others. The students learn and employ the value of reflecting in order to organize and execute more community service activities within their social study curricula that will inspire involved and active citizenship values. Pre-service teachers develop beliefs in the importance of community service and awareness of the difficulty often inherent in making a difference. Lastly, the university students learn to develop better organization and time management skills for their future teaching.

The previous theorists and theories discussed show that the goal of facilitating learning within museums involves combining many theories and methods. Museum educators employ the theories of Piaget, Vygotsky and Dewey to understand how individuals learn from a combination of maturation, experiences and building upon previous knowledge. Museum educators also include Constructivism techniques, by engaging visitors in hands-on and minds-on activities. Individuals learn when they are actively involved in building their own learning. Furthermore museum educators employ

---

<sup>58</sup> Wade, 1995, 126-127.

different learning approaches to inspire learning in participants. Understanding how children and adults learn enables museum educators to augment learning in participants. The educational theories discussed point out that universities must be involved within and outside of their academic communities to increase learning. Museums actively seek ways to be involved with the needs of the community and individuals. Museums' connections with participants' learning and educational needs assist learning and the overall value of the museum experience. Museums are valuable resources for enhancing learning beyond the classroom walls.



## **Chapter 2: Case Studies**

### *Introduction*

The following four studies at the Toledo Museum of Art, National Ranching Heritage Center, Yale Center for the British Arts and The Frick Collection demonstrate the roles museums have in building professional skills to improve career goals. Museum professional staff and professionals collaborated to develop and execute these programs, all of which were held in a museum settings. The case studies build on previous knowledge by engaging participants in new learning experiences in museum environments. The programs focus on active participation with social interaction, as well as thought and reflection. All programs encourage participants to have meaningful learning experiences within museum settings. Each case study's program was distinctively designed for the needs of the participants and employed aforementioned learning and educational theories.

### Case Study 1:

#### *The University of Toledo and the Toledo Museum of Art Family Center*

The Toledo Museum of Art collaboration with the University of Toledo is an art educational program for university pre-service teachers to teach and nurture art appreciation and aesthetic development in children ranging in ages three to eight. A required course for Early Childhood and Art Education majors, "AED3100 Art for the Pre and Primary Child" has been offered since 2001, by Katherine Danko-McGhee, Ph.D. A requirement for the course is the collaborative program with the adjacently located Toledo Museum Of Art's Family Center.

The course objectives include the following:

- Pre-service teachers have hands-on experiences with practicing the learning development theories and teaching methods they have been learning in the classroom
- Children are engaged in developmentally appropriate observation experiences to encourage learning
- University students overall studies in early childhood education are enhanced
- Future teachers are familiarized with a museum setting that can have an impact on facilitating their careers
- The experience gives pre-service teachers an opportunity to collaborate and reflect on the “art of teaching”<sup>59</sup>
- The children participating in the program increase their awareness of art and enhance their observational and verbal communication skills
- The Toledo Museum of Art Family Center offers a hands-on experience workshop for visitors that increases its visibility and value in the community.

Danko-McGhee serves as a consultant to the Family Center Director. The director and Danko-McGhee work together to offer the workshop activity to the public and make the necessary preparations for the continued success of the overall course.<sup>60</sup>

Students continue to attend classes while engaging in the six-week in-the-field experience at the museum. All the galleries are available for the children participants to explore with their partnered university students. The Toledo Museum of Art, which has over 30,000 works of art in its extensive collection of American, European, Greek, Roman, Asian and

---

<sup>59</sup> Katherine Danko-McGhee phone interview with author on January 11, 2010, and Katherine Danko-McGhee. “The Museum-University Connection: Partnerships in Early Education Art Experiences,” *Art Education*, Nov 2004, 35.

<sup>60</sup>The aesthetic development program is advertised in Workshop offerings at the Toledo Art Museum Family Center two months in advance. The program is opened to children from the ages of two to eight. The six-week program is held once a week with three visits to the museum and three sessions in the workshop at the Family Center. There is no fee for the children to participate. The university and the Family Center provide materials the students need to conduct the program. Part of the registration process requires a family member to fill out a child’s profile. This profile includes “the child’s favorite color, play activities, interests, and length of attention span.” “Drawings by the child that portray self, family, friends, or pets” are also included. The university professor uses these profiles to partner each child with a student, Danko-McGhee, 2004, 37.

African artworks, concentrates on portraits and traditional representational genre paintings that the children may relate to in their first meeting.

The children lead the university students to what interests them in the galleries of the museum. This activity hinges on Piaget's belief of children being in control of using previous knowledge to engage in new learning experiences. The activity also utilizes Dewey's ideas on active and mindful participation. Throughout the program, the partnered university students and children work separately, but interaction with the other partnered groups is encouraged. This social interaction demonstrates Vygotsky's theory of promoting learning through social communication.

The focus of Danko-McGhee's course is to learn, discuss, and practice the various developmental learning theories and hands-on teaching strategies. For some of the university students, this course is their first hands-on experience with children and teaching through which the "students learn about the graphic and aesthetic development of young children and how best to nurture this process in developmentally appropriate ways."<sup>61</sup> Danko-McGhee focuses on the developmental learning theories of Piaget, Vygotsky and Dewey in her course.<sup>62</sup> As the program is conducted, students discuss problems and challenges, and share their overall experiences within the classroom setting. University students keep journals to help them reflect on their experiences and to put the learning theories into practice.

---

<sup>61</sup> Third year or junior students take this course before their senior student teaching in a classroom setting. Danko-McGhee's phone interview with author on Jan 11, 2010, and Danko-McGhee, 2004, 35.

<sup>62</sup> Danko-McGhee's phone interview with author on Jan 11, 2010, Danko-McGhee had previously referred to the theories of M. Parson, E. Feldman, and E. Cole for learning development theories and educational teaching methods.

The university students encourage the children to play developmentally appropriate “art criticism and art appreciation museum games” during the three museum visits.<sup>63</sup> Games such as Color Match, Match the Object in the Painting, Match the Emotion, Painting Puzzle, Storytelling, and Guess What’s on my Glasses, are employed to sharpen verbal communication, observation and discrimination skills in the children.<sup>64</sup>

Storytelling, for example, utilizes the beliefs of Vygotsky and Piaget. The game helps to increase children’s verbal communication skills. The children tell others a story of what they think in relation to the painting. Through this activity, they demonstrate their cognitive learning development stage. The games are tools for facilitating social interaction and meaningful learning experiences for all involved. All of the activities in the program motivate and challenge the children to “develop language, visual perception, critical thinking, problem solving, eye-hand coordination, and cultural sensitivity skills.”<sup>65</sup> The children decide what artwork and activities interest and engage them. This activity utilizes the Constructivism Theory of “free-choice learning.” The learner is in control of intensifying the experience of learning and gaining new knowledge.

The university students keep journals to document the developmental appropriateness and progress of the children. These journals sharpen the university students’ “observation, reflection and documentation skills with documenting

---

<sup>63</sup> Danko-McGhee, 2004, 37.

<sup>64</sup> In the “Match the Object to the Painting” children are given a basket of objects that they can find in the selected group of paintings. Children share the articles they choose, and the paintings containing the objects with the other children in the program, Danko-McGhee, 2004, 37-38.

<sup>65</sup> Three sessions are conducted as a studio workshop experience at the Family Center. The activities in the workshop reinforce and expand the games/activities that were conducted in the museum, Danko-McGhee, 2004, 40.

developmental appropriateness of the participating child's strengths and weaknesses."<sup>66</sup>

The journals are a good accounting of the quality of learning taking place in the university students, and show reflective conversations between the university students and the children. Reflection and writing in the journals employ Vygotsky's beliefs on how examining, reflecting, and making future plans can be valuable to the overall learning experience. Challenges and/or problems to be solved are also described in the journals. In addition, the journals hold a record of the preparation of materials and time management assessment of the students.<sup>67</sup> The journals provide the university students with a source to reflect on their theoretical approaches and new knowledge gained.

After teaching the art appreciation and aesthetic development program at the museum, university students have expressed their continued commitment to their career choice of early childhood education. There have been a handful of university students that continued their commitment to education careers, but not in early education after the program. This shows how the program helped to refine these university students' career choices. The overall experience of conducting this workshop activity benefits the career development for the university's education major students.

---

<sup>66</sup> Danko-McGhee, 2004, 39.

<sup>67</sup> The students fill out an observation form that is used for assessing the criteria of concepts learned, skills reinforced and adaptations necessary for the child to be successful. The students are encouraged to include more insights and observations on these forms. The students keep all the documentations for teaching aids in their future careers, Danko-McGhee phone interview with author Jan 11, 2010.

Ms. Danko-McGhee feels the experience for the university students is “opening their eyes to using museums as a resource.”<sup>68</sup> The experience offers possibilities to use museums for the children participants and the university students, affords university students and children the opportunity to feel more comfortable and confident in a museum setting, and provides a resource for students to use museums as a component in their teaching. Students become familiar with strategies of using objects to increase learning opportunities in their teaching careers as well. In the past, many students might not have visited or thought to use the museum for their career development or personal enjoyment. This program is as an opportunity to introduce the museum’s overall value to students at the university, benefitting the Toledo Museum of Art Family Center as well; in fact, the workshop has a six-month waiting list for children to enroll.<sup>69</sup>

**Case Study 2:**

*Texas Tech University (TTU), Lubbock, Texas and the National Ranching Heritage Center (NRHC)*

In 2006, professor Reese H. Todd, PhD. established an affiliation with the National Ranching Heritage Center (NRHC) located on the north boundary of Texas Tech University (TTU). The purpose of the partnership is for graduate students to have “practical teaching experience” and for the NRHC to have qualified educators lead their summer programs.<sup>70</sup> As an associate professor of Curriculum Studies and Teacher

---

<sup>68</sup> Students are offered the ability to skip weekly quizzes in class if they volunteer to work once a week in the Family Center for the Director. This option is viewed as an opportunity for students to gain more hands-on experience, Danko-McGhee phone interview with author on Jan 11, 2010.

<sup>69</sup> Danko-McGhee phone interview with author on Jan 11, 2010, and Danko-McGhee, 2004, 40.

<sup>70</sup> Reese Todd and Stephanie Gray Brinkman. “Service Learning in a Social Studies Methods Course: Experience and Place-Based Curriculum”, *The Educational Forum* 2008, 79. Ms. Brinkman is no longer at NRHC, Reese Todd phone interview with author on January 14, 2010.

Education at TTU, Todd sought an in-the-field, hands-on teaching experience for her graduate Social Studies Methods summer course. The objectives for the field work program include designing lesson plans and teaching lessons focused on a civic oriented topic; assessing time management skills; and keeping with the general mission of TTU for the teachers' education program.<sup>71</sup> The collaboration exposes and builds educators' career skills in regard to civic engagement while it also familiarizes the university students with how museums can be involved in civic learning service programs.

Todd needed to offer her students a hands-on experience in which to practice their skills in lesson planning and time management. Offering hands-on experience to Todd's summer graduate class is difficult, since schools are not open during this time period. NRHC needed volunteer educators for their outreach summer programs. They were very happy to have university graduate education students as facilitators. The collaboration was a win-win situation for the university and NRHC. The NRHC is a museum and historical park. The thirty-acre facility was "established to preserve the history of ranching, pioneer life and the development of livestock industry in North America."<sup>72</sup> The center consists of many historic buildings some of which are barns, a one-room schoolhouse, ranch buildings and bunkhouses. The students conducted their program in some of these buildings.

The theme of the program is "Prairie Dog," a relevant and engaging topic since prairie dogs are habitants of the local area. Prairie dogs have adapted to the changing

---

<sup>71</sup> The mission of the university's education program includes "preparing educators for a diverse society and integrating scholarship, research, and practice in collaboration with individuals, communities, educational institutions, and agencies" (Todd et al, 2008, 80).

<sup>72</sup> See NRHC Website 11 April 2010 <<http://interoz.com/lubbock/ranch.htm>>

environment of the southern plains of Texas.<sup>73</sup> The graduate students “[investigate]ing social studies issues through local civics and through geography, history, and economics that engage learners in meaningful and relevant curriculum.”<sup>74</sup> Each graduate student is responsible for creating one lesson plan for the total curriculum of the “Prairie Dog” program. The graduate students are responsible for teaching the children lessons they prepare.<sup>75</sup>

Reese Todd worked closely with Program Coordinator Stephanie Gray Brinkman at the NRHC to develop the theme and format of the original program in 2006. Brinkman was the only museum staff member to work with the graduate students involved in the program. She provided the theme, materials, training session and guidelines for the hands-on curriculum. She presented teaching strategies that included hands-on familiarity with museum objects. Brinkman instructed the university graduate students on how to relate information to the participants. Her teaching strategies utilized the learning theories of Dewey, Piaget and Vygotsky. The graduate students engage the participants in activities that will lead them to scaffold their prior knowledge with the “Prairie Dog” program experience. This activity enables participants to gain new knowledge from the overall experience. The university and NRHC provide relevant materials that aid in executing the program. NRHC has a large endowment, which enables the center to offer the summer program to children at no cost.

---

<sup>73</sup> The role they have in the ecology of the southern plains “is often debated by ranchers, farmers, urban developers, and animal lovers,” Todd et al, 2008, 80.

<sup>74</sup> Todd et al, 2008, 80.

<sup>75</sup> There were approximately fourteen children participants, ranging from kindergarten through sixth grade that participated in the original program at NRHC for approximately three hours each day for one week during the summer of 2006, Todd et al, 2008, 79-91.



Both professors Todd and Danko-McGhee from the University of Toledo (Case Study 1) refer to John Dewey's theory of hands-on experience as an important and excellent tool for facilitating learning. The intention is to engage learners in active and mindful experiences to expand learning potential. Todd utilizes Dewey's teachings and the Wade Theory of Service Learning to develop a commitment to community service learning projects in her graduate students. The hands-on teaching learning experience helps the graduate students to become familiar with methods on how to develop social civic-oriented learning projects that will have an impact on their future careers as educators. Integrating various environments outside the classroom to support and motivate the process of learning has been theorized by Ernest Boyer and has proven to benefit the intentions of both students and educators.<sup>76</sup> Todd employs these theories and ideas to teach and train her students how to develop lesson plans that involve civic engagement principles.

The graduate students keep journals that contain observations, reflections, and narratives about their work in connection to the plans and challenges they have in executing their portion of the program and the total program. These journals provide valuable documentation for training the graduate students during the in-the-field service program. The professor uses the journal to track the graduate students' learning and progress. The journals also benefit the graduate students as sources for future reference of keeping their reflections, examination of the program, and plans for future teaching goals. The graduate students' progress in learning lesson-planning, time management

---

<sup>76</sup> Boyer, 1996, 143-148.

skills, and civic engagement activities are further discussed in the classroom after the program ends. The students at TTU contribute their lessons and activities to National Ranching Heritage Center Museum's educational resources library.<sup>77</sup>

The program has several short-term benefits for the graduate students. They are able to meet course requirements of field experience, and the state standards for professional competency. The program is a fine addition to the students' resumes, and students have the opportunity to implement what they have learned in class, by practicing the theoretical methods. Students discover the viability various teaching approaches and strategies have. The students involved in the program have expressed "that they gained knowledge and skill in designing instruction, implementing responsive instruction, and acting as responsive citizens in the community."<sup>78</sup> A few graduate students who had chosen not to participate in the program indicated that in not doing so, they had missed an important opportunity to improve their teaching skills. The learning opportunity of this program has had an impact on all the students in Todd's course.

The long-term benefits for the students include gaining more confidence and commitment to their careers, as well as involvement in the community. The students gained valuable practical teaching experience in developing social studies programs for K-4 grades. One graduate student shared, "it doesn't work to just talk [to kids]; they like to do things."<sup>79</sup> This comment demonstrates the awareness and confidence the graduate students at TTU gained from the experience at the NRHC. The hands-on experience of

---

<sup>77</sup> Todd et al, 2008, 83, 85-86.

<sup>78</sup> Todd et al, 2008, 85.

<sup>79</sup> Todd et al, 2008, 85.

teaching and actively engaging the children in a civic-oriented program increased the graduate students' ability to create lesson plans and teach curriculum outside the classroom. This experience of using objects and a museum environment has been favorable in stimulating learning and knowledge gained for the children and the graduate students. Todd feels the program motivates the students and expands the responsibilities of educators to be involved in their communities. She believes firmly in the ideology of educators' need to give back to the community.<sup>80</sup>

In order to assess the overall effectiveness of the program, Todd uses project evaluation forms that contain rating level questions and essay questions about the overall experience for all involved. The evaluations reveal how beneficial the program is for the graduate students, NRHC, and the children participants involved. The success and effectiveness of the program are demonstrated by the continuation of the program and the increase in the number of children enrolling in the summer program. The program has proved to be an advantageous arrangement for NRHC, TTU, and the community. NRHC has benefited by having qualified educators teaching civic-oriented summer programs. This program recognizes and employs the valuable resources the NRHC has in civic-oriented programs for educators and the community.

This program has similarities to and differences from the program at University of Toledo and Toledo Art Museum Family Center (Case Study 1). In these two studies, the professors show university students the value that museum settings and objects offer in their overall career development as educators. These professors employ a hands-on

---

<sup>80</sup> Todd phone interview with author on Jan 14, 2010.

experience to aid and intensify their students' training with their future careers as educators. All of the students attend classes before, during, and after the completion of the museum programs. All students engage in student teaching in a classroom setting after the course. Both studies use reflective journals as a source of learning for the students during and after the in-service program. The journals are a source for the professor to track the university students' learning.

The two case studies differ in that the students at The University of Toledo students (Case Study 1) are undergraduates with little or no hands-on experience in teaching. The professor and the director of the Toledo Museum of Art Museum Family Center develop the activities/lessons the university students conduct in the program. The students at TTU (Case Study 2) all have their bachelors' degrees and some teaching experience. The TTU graduate students are responsible for the planning of lessons and executing the program.

Reese Todd is still involved with the TTU program, which has grown in various ways. The university offers similar programs at different museum settings now, including an archeological site at Lubbock Lake Landmark. This program gives course credit to the students involved as well. The landmark offers other educational programs for the continuing education of educators. All of these programs help to increase the blending of education with civic engagement, benefitting educators, students, and the community.

Since the initial program at NRHC in 2006, Reese Todd has been instrumental in organizing and is presently the secretary of the South Plains Education Resource Collaborative (SPERC). This organization has approximately twenty-six museum and

other settings in the South Plains of Texas that are involved in educating youth. These organizations collaborate with the TTU to offer in-service learning projects for university students that will enhance their learning of curriculum and support their career ambitions.

In addition to working with university students, these organizations have reached out to approximately fifty-seven public school districts in Texas to offer educational programs that are tailored to educators' needs. Todd's work has helped to introduce and encourage students and educators to community involvement. The museum setting and use of their collections are valuable resources for educators. The museums involved in SPERC have formed partnerships to assist each other in organizing and executing educational programs. These partnerships have been helpful for museums' strategic plans, grant applications, and other museum planning.<sup>81</sup>

### **Case Study 3:**

#### *The Yale Center for British Art (YCBA) and the School of Medicine at Yale University*

In the 1998-1999 academic year, "Enhancing Observational Skills" was jointly developed by Irwin M. Braverman, M.D., Professor of Dermatology at the School of Medicine at Yale, and Linda K. Friedlaender, M.S., the Curator of Education at the Yale Center for British Arts to improve visual, observational and verbal skills for professionals.<sup>82</sup> This case study demonstrates how affiliations between museum settings and higher education institutions can be adapted to develop career-enhancing programs for multiple professional situations.

---

<sup>81</sup> Todd phone interview with author on Jan 14, 2010.

<sup>82</sup> Jacqueline C. Dolev, M.D, Linda Krohner Friedlaender, MS, and Irwin M. Braverman, M.D. "Use of Fine Art to Enhance Visual Diagnostic Skills," *Journal of American Medical Association (JAMA)* 2001, 1020.

Dr. Braverman's purpose for the program was to increase medical students' abilities to observe and verbally articulate information about their patients' conditions in making medical diagnoses, "[abilities]y that they [doctors] all had, and all used, 50 years ago."<sup>83</sup> He feels that medical doctors are becoming too dependent on medical tests to determine the diagnoses and treatments of their patients. Medical students are not using observation and social interaction skills as important tools to diagnose a patient.

Ms. Friedlaender's purpose for developing the program was to encourage and heighten doctors' diagnosing knowledge and empathy for their patients. She had had "a disappointing experience at the hospital when she saw that a resident examining a friend of hers prior to surgery failed to notice obvious [emotional] signs that the patient was agitated."<sup>84</sup> Increasing the observational and verbal literacy skills in doctors can have important benefits for the overall care of patients.

Braverman and Friedlaender utilized the YCBA's extensive collection of British art from the sixteenth century to the present.<sup>85</sup> Specifically portrait and figural representative paintings by William Hogarth, Thomas Gainsborough, Joshua Reynolds, George Stubbs, Joseph Wright of Derby, John Constable, and J. M. W. Turner. First year medical students in this one-session observational program visit the YCBA to study

---

<sup>83</sup> "Yale innovation in the art of observation extends its reach," *Medicine@Yale* Mar/Apr 2006, 6.

<sup>84</sup> *Medicine @Yale*, 2006, 6 and Linda Friedlaender interview with author on February 15, 2010.

<sup>85</sup> It is heralded as being the largest collection outside of Great Britain because of the donation of Paul Mellon class of 1929. "Yale University of Medicine and YCBA Observational Program," Science Blog Website 07 April 2010 <<http://www.scienceblog.com/community/older/1998/D/199804113.html>>

artworks with the museum education staff.<sup>86</sup> Museum staff and the faculty do not prepare the students before the program, a difference from the other programs discussed earlier.<sup>87</sup> The instructors--museum educators and medical school faculty--do not want the students to have previous knowledge, judgments or conclusions about the artworks before they visit the museum.<sup>88</sup> The museum educators employ learning theories, teaching strategies, and previous experiences as educators to achieve the objectives of the program.

In viewing the art collection, medical students identify and then use the details from their observations to make conclusions about the subjects in the artwork.<sup>89</sup> This activity demonstrates the importance of utilizing objects to stimulate learning new perceptions about a subject. The museum educators lead the medical students through the galleries. This activity utilizes the Visual Thinking Strategies by encouraging students to describe what they see and what the subjects are doing. The visual and verbal activity fosters observation and communication skills within the groups and supports Vygotsky's findings on the importance of communication in enhancing learning. The medical students search for obvious clues as well as subtle details to improve their overall

---

<sup>86</sup> The one session lasts approximately three hours. The medical school covers all the costs related to photographs, copies of slides and paperwork. The museum provides the educators for the program.

<sup>87</sup> The museum educators make up their own minds as to the approach they will employ to engage and support learning while conducting the program. It is important to note the educators have their own training sessions before the program. They view selected artworks and take on the role as student and then as educator during the training. This training is an opportunity for the educators to prepare for and practice how they will conduct the program.

<sup>88</sup> "The use of representational paintings capitalizes on the students' lack of familiarity with the artworks," they discover details without bias, Dolev et al, 2001, 1020.

<sup>89</sup> Frederic Leighton's Mrs. James Guthrie ca. 1864-65 is one of the paintings available for the program. The medical students will analyze and discuss the subject's facial expression, skin color, and body pose in this painting for example. According to Dr. Braverman, the nineteenth century artworks offer stimulating study for the medical students. See YCBA Video Website, Braverman, 2009, 08 April 2010 <<http://opa.yale.edu/media/video/ArtMedicine-20090407.mov>>

observational skill in learning about the artwork. This activity demonstrates the Constructivism Theory of encouraging the students to be in control of experimenting and discussing their conclusions openly. The museum staff's acknowledgment of the medical students' conclusions, while not validating their conclusions, deepens the students confidence in learning to make observations and conclusions. It is the intention that discussion within the small groups will further the collaboration and teamwork efforts the medical students will employ in their future careers. If some items to be observed are not noticed by the students, the museum educators have a list of items to specifically motivate more observation and discussion. After the observation and discussion is completed, students have the option of being provided with the historical context of the artwork.<sup>90</sup>

The medical students demonstrate the enhancement of observational and verbal literacy skills in their classwork and hospital clinical activities after the observational program.<sup>91</sup> For example, the learning experience of the museum program has improved medical students' ability to analyze photographs of dermatological conditions. This program demonstrates that heightening the observational and verbal literacy skills in medical students aids in patient treatment and care. Since the program was first introduced in 1999, the course has become a requirement for first year medical students and now includes second and third year medical students.

---

<sup>90</sup> Friedlaender phone interview with author on Feb 15, 2010 and YCBA Website 08 April 2010 <[http://ycba.yale.edu/education/edu\\_educ.html](http://ycba.yale.edu/education/edu_educ.html)>

<sup>91</sup> Evaluation forms were used to evaluate and make any necessary changes when the program was first being offered. The success of the program is demonstrated by its continuation of more than ten years, Friedlaender interview with author on Feb 15, 2010.



The success of the affiliation has led to an adaptation of this program for the students at the School of Nursing School at Yale, and also used in the training of Practitioner Assistant students at Yale. This observational program has also been adapted at approximately twenty medical schools across the United States.<sup>92</sup> The YCBA now offer the observational program to law enforcement agencies in the New Haven, Connecticut area.<sup>93</sup> YCBA conducts educational programs for the purpose of aiding the needs of public school educators as well.

Another valuable benefit of the YCBA program is that it alters previous views and assumptions of the participants about museums. This program connects to an audience that does not frequent museums regularly. Medical students' time is very structured and visiting museums is not usually on their agenda of possible activities. Both the Yale Museum and the Yale Center for British Arts on the campus of Yale University offer the students enriching experiences for their professional and personal learning. Ms. Friedlaender's involvement in the university and community is an important focus of her professional and personal commitment.<sup>94</sup> Ms. Friedlaender, Professor Reese Todd at the Texas Tech University (Case Study 2), and Professor Katherine Danko-McGhee at the University of Toledo (Case Study 1) all express that they have an important role and commitment to education. These educators stress how important it is for all educators to

---

<sup>92</sup> Ms. Friedlaender and Dr. Braverman have visited medical schools in Japan, Singapore, and Taiwan to share their observational program. The program has become part of the curricula for many medical school students' education demonstrates its value. YCBA Website Video and Friedlaender phone interview with author on Feb 15, 2010.

<sup>93</sup> *Medicine@Yale*, 2006,6.

<sup>94</sup> The teaching techniques and learning theories used for conducting this program come from over the twenty years experience Friedlaender has in the education field at various museum sites. Friedlaender phone interview with author on Feb 15, 2010.

be involved in their communities as well as to develop a commitment to the community in their students and audiences.

In 2001, *The Journal of American Medical Association (JAMA)* published a study about the program at YCBA and Yale University Medical School conducted in 1999 to find if there was measurable improvement of observational and visual literacy skills in medical students after participating in the observational program study at YCBA. First year medical students volunteered to participate in the elective program. Two groups were studied: those who participated in the observational program, and those who did not. Pre-tests of two sets of photographs of patients with skin disorders were randomly given to all the students. Students were asked to write a brief description of what they saw in each photograph for three minutes. Students were told not to comment or to make diagnostic conclusions, just to write their observations. These pre-tests were graded with one point for each detail they observed. The researchers found that there was not a significant difference in the pre-test scores of students who participated in the program over those who were not going to participate in the program.

After the program, all medical students in the study were administered a post-test. This post-test was administered randomly with the same sets of photographs. Again, the post-test was graded on what the students observed in the photographs. The results from the study showed a 10% increase in diagnosing skills in the students who had participated in the observational program. Overall, the students that had participated in the program “achieved higher post-test scores in each of the photographs used in the post-test

examination.”<sup>95</sup> The medical students who did not participate in the program were found to lack communication and observational skills. The skills of the medical students who had participated in the program had shown a measurable improvement.

In 2006, the Harvard Medical School published a study conducted between 2004 and 2005 for first year dental and medical students from Harvard.<sup>96</sup> The students participated in an elective, “Training the Eye: Improving the Art of Physical Diagnosis,” at the Museum of Fine Arts in Boston (MFA).<sup>97</sup> This study found a 38% increase of observational and verbal literacy skills in medical students who participated in this program over the students who did not participate in the observational program. The program at MFA had more sessions than the program at YCBA.<sup>98</sup> The researchers found that the more sessions the students attended the greater increase in their observational and verbal literacy skills.<sup>99</sup> The methodology of the Visual Thinking Strategies Theory (VTS) encouraged observation and discussion facilitating the development of critical thinking, communication, and visual literacy in the students.

---

<sup>95</sup> Dolev et al, 2001, 1020

<sup>96</sup> Sheila, Naghshineh M.D, Janet P. Hafner, Ed.D, Alexa R. Miller, Maria A. Blanco, Stuart R. Lipsitz, Sc.D, Rachel P. Dubroff, M.D, Shahram Khoshbin, M.D, and Joel T. Katz, M.D. “Formal Art Observation Training Improves Medical Students’ Visual Diagnostic Skills,” *Journal of General Internal Medicine (JGIM)* July 2008, 992.

<sup>97</sup> The costs for this program were covered by the already existing partnership between Harvard Medical and Dental School and MFA. The major cost for the program was the faculty and museum educators’ time to prepare and present the elective course, Naghshineh et al, 2008, 992-993.

<sup>98</sup> The program at MFA had approximately 9 weekly, 2 ½ hour sessions that convened at the museum. The elective course included an optional drawing session for the students after the 8 sessions.

<sup>99</sup> The students involved in the program were “asked to complete weekly assignments, including focused readings and brief visual training exercises,” as well Naghshineh et al, 2006, 992 -994.

Although the observational programs at Yale Center of British Arts and the Museum of Fine Arts differ in the numbers of sessions at the museums, the works of art studied, and the curriculum credit offered, both studies demonstrated an increase in visual and verbal literacy skills in the students who participated in the studies. These two studies are instrumental in demonstrating how useful the observational program is in improving and honing the skills of medical students for their future careers as doctors. This observational program has since served as a powerful model for similar programs offered at numerous medical schools and museums. Texas University, Weill Cornell Medical College, University of Rochester, and University of California in Irvine are a few of the medical schools that now offer the observational program.<sup>100</sup>

#### **Case Study 4:**

The Frick Collection and the Weill Cornell Medical College

The Frick Collection and the NYPD

“The Art of Observation” and “The Art of Perception” programs

*Picturing America* (NEH) and WNET “The Art of Perception” program

The fourth and final case study includes three professional development programs developed and executed by Amy E. Herman, one for medical students, one for law enforcement agencies, and one for educators. Amy E. Herman, JD, MA, consulted with Ms. Linda Friedlaender at Yale Center for British Arts to customize and develop an observational program while Herman was Director of Education at The Frick Collection.<sup>101</sup> Ms. Herman, together with Dr. Charles L. Bardes and Debra Gillers from the Weill Medical College of Cornell University, collaborated to design and implement an

---

<sup>100</sup> See cited articles about the University of Texas, Weill Cornell Medical College, University of Rochester, and University of California observation programs in Bibliography.

<sup>101</sup> Ms. Herman was at The Frick Collection from 1996 to 2007. She is presently the director of education at WNET in New York City.

observation program for medical students at Weill Cornell Medical College in New York City.<sup>102</sup> The objective of the “The Art of Observation: Weill Cornell Medical College and The Frick Collection” program was to motivate and heighten students’ “observation, description, and interpretation of visual information” skills.<sup>103</sup> Ms. Herman commented that students’ feedback was positive in regard to having participated in the program. “I’ve had students tell me when they [now] walk into a hospital room they don’t go right for the chart.”<sup>104</sup> The medical students have learned effective visual observation of the physical human being instead of acquiring their initial engagement with a patient from a chart or piece of paper. Student feedback demonstrates the positive impact the program has had on enhancing the observation, interpretation, and verbal literacy skills for the professional development of the participating medical students.

The observation program at The Frick Collection focuses on viewing portrait paintings that include the artists Johannes Vermeer, Frans Hals, Francis Cotes, Thomas Gainsborough, and Sir Anthony Van Dyck. Concentrating on the details of the human face sharpens the medical students’ skills and knowledge in diagnosing disease and the

---

<sup>102</sup> The pilot study for this program was conducted in 2000 and published in *Medical Education* in 2001, Charles L. Bardes, M.D, Debra Gillers, M.D, and Amy E Herman. "Learning to look: developing clinical observational skills at an art museum," *Medical Education*, 2001, 1157-1161. Medical students observation program is also discussed in Amy E. Herman, Amy E. "How the Long Arm of the Law is Reaching The Frick Collection," *Museum News*, May/June 2007, 84-87.

<sup>103</sup> The students who participated in the pilot study viewed a projected photograph of a patient’s face and were told to write a description of the face as a pre-test. At the end of the observation program, the students were then given a post-test of viewing and writing a description of the same photograph they had viewed for the pre-test. In comparing the pre-test and post-test results, the students’ demonstrated an increase in their visual observation and verbal literacy skills. The enhancement of these skills was a clear indication of the success of the study program, Bardes et al, 2001, 1157-1158.

<sup>104</sup> Leslie Berger. “By Observing Art, Med Students Learn Art of Observation,” *The New York Times*, 02 Jan 2001, F5.

patient's emotion and character. The tradition of studying the patient's face can be traced back to ancient Hippocratic and Indian medicine.<sup>105</sup> Unfortunately, diagnosing disease from abnormal findings has become more the practice than "understanding the person's nature or character," according to Dr. Bardes. Exposing students to art may lead them to learning "a broader conception of human-ness," that will build observation skills and better understanding of their future patients' treatment and care.<sup>106</sup> This activity uses art objects to broaden and empower medical students' perceptions, critical thinking and visual analysis.

The observation program has three sessions at The Frick Collection.<sup>107</sup> In the first session, students view portrait paintings in the museum galleries with faculty and museum educators. The museum educator encourages the students to describe what they see and share their ideas, experiences, and feelings about the subject matter in the paintings. The students then form smaller groups that include two students, a museum educator, and a medical faculty member to study more paintings. Students describe and discuss their observations and conclusions within these groups. At the second session, small groups of students study paintings and present their conclusions to the whole group of students involved in the program. The museum educators and faculty promote open discussions to enable the sharing of the students' observations and conclusions to aid in learning through social interaction. Encouraging and influencing discussion with open-

---

<sup>105</sup> At the YCBA observational program, (Case Study 2), the students view portraits and figural representational genre paintings that include landscapes.

<sup>106</sup> Bardes et al, 2001, 1161.

<sup>107</sup> The observation program at The Frick has three sessions more than the one session at the YCBA (Case Study 2) and less than the seven or more sessions at MFA and Harvard University study (Dolev et al, 2006).

ended questions utilizes the Visual Thinking Strategies. The importance of social interaction sharpens the focused attention of the learner to think and share openly. This adds to the ability to learn and demonstrates the beliefs of Vygotsky, Dewey, Gardner, and the Constructivism Theory.

At the third and last session at the museum, the smaller groups of students study pairs of paintings and concentrate on comparing and noting the contrasts in the paintings. The small groups then view photographs of patients and perform the same activity of comparing and contrasting the photographs. This activity utilizes Vygotsky's teachings of the medical students practicing what they have learned to ensure it is remembered and becomes new knowledge gained. Presenting and discussion with the entire group then follows. This activity is an opportunity to engage the medical students in social interaction. The medical students practice the new learned skills in observing and describing patients. This activity helps the medical students potential for remembering the learning experience and retaining the new knowledge. The medical faculty and museum educators observe and motivate the medical students during all the discussion time to aid in the students' progress of sharpening observation, interpretation, and verbal literacy skills.

The medical students who have taken this program have indicated that the program has positively enabled an increase of "observation, description, and interpretation of visual information" skills for diagnosing and understanding the clinical patients they see.<sup>108</sup> Ms. Herman's, "Art of Observation" program has since been an

---

<sup>108</sup> Berger, 2001, F5 and Bardes et al, 2001, 1157.

addition to several medical school curricula in the New York City area. A similar or “sister “ program has been offered to students at Weill Cornell Medical College and the Metropolitan Museum of Art in New York.<sup>109</sup>

To further emphasize the impact museum observational programs have on participants, the following study shows the long-term effects on participants. In 2005, a study at the University of Cincinnati was conducted to find what effects the art observation program had on the university’s medical students at the Cincinnati Museum of Art. The study contacted third and fourth year medical students who had participated in the observation program during their second year of medical school at the university.<sup>110</sup> Their findings showed that the medical students felt the effects of the program increased over time more than just immediately after completing the observation program. Students commented that the program had increased their “observation, non-verbal and verbal communication, and descriptive skills as well as [giving them] an ability to see the patient as a whole person.”<sup>111</sup> Hence, students felt overall that the augmentation of observational and communication skills had made an impact on later patient-doctor relationships in their clinical education studies.

---

<sup>109</sup> David T. Mininberg, M.D, Nancy Thompson, Ph.D, and Joseph J. Fins, M.D. “The Art Of Medicine at the Metropolitan Museum of Art,” *Museum News*, May/June 2005, 64.

<sup>110</sup> The participants filled out online evaluations that contained eight journaling survey questions. Seventeen of the nineteen medical students who were eligible to take the survey participated, Nancy C. Elder, Barbara Tobias, Amber Lucero-Criswell and Linda Goldenhar, “The Art of Observation: Impact of a Family Medicine and Art Museum Partnership on Student Education,” *Medical Student Education*, June 2006, 393-398.

<sup>111</sup> Elder et al, 2006, 395.



Students also noticed how the visual arts aided in heightening their interpretation and reflection skills. One student commented that the program enabled them to realize how important it was to “think outside of the box.”<sup>112</sup> The students felt the program helped to make them to reflect on their future roles as doctors. Through the evaluation survey, the study concluded that the observation program had achieved its objectives in increasing observational and verbal communication skills. Students felt that the observation program had given them “time for self-reflection, personal growth and an enhanced appreciation of art.”<sup>113</sup> This study demonstrates how the museum environment and objects are a valuable resource for learning and personal growth in participants.

The success of the “Art of Observation” program at The Frick Collection has led Ms. Herman to implement a similar program for motivating and building the visual observation and verbal literacy skills of other professionals. Amy Herman’s background in law may explain her interest in developing the “Art of Perception” program. This observation program focuses on the critical thinking and verbal literacy skills of law enforcement officers, such as those in the New York Police Department. The main objective of the program is to sharpen observational, interpretation, and visual literacy skills in law enforcement officers. Herman contacted the NYPD in 2004 offering a hands-on experience of viewing artworks and crime scene slides.

The format of the three-hour one-session program provides law enforcement officers with the opportunity to observe, describe, and assess a story about the artworks’

---

<sup>112</sup> Elder et al, 2006, 396.

<sup>113</sup> Elder et al, 2006, 397.

subject.<sup>114</sup> Herman asks participants to tell what they see and describe in detail what is going on in the painting. She motivates the participants “to engage in visual analysis and critical thinking.”<sup>115</sup> After visiting the galleries, the participants return to a museum conference room to continue discussion and view slides of crime scenes. Participants employ what they have seen and learned in the museum galleries. This program is similar to the observation program Ms. Herman developed for medical students in that open discussion is an important feature in encouraging learning. A heightened awareness in observational, interpretation, and verbal literacy skills is clearly demonstrated when the participants view the crime scene slides.

Herman’s program has been praised in various periodicals, such as *The New York Times*, *Museum News* and *The Wall Street Journal* for the development of a museum education program that encourages law enforcement officers to have a new outlook on how they approach their profession.<sup>116</sup> One evening while traveling on the New York City subway, Ms. Herman found herself being observed by two “burly” men. As she was leaving the train, one man told her they were police officers that had taken her course. The police officers praised Ms. Herman for the program.<sup>117</sup> Ms. Herman has heard many

---

<sup>114</sup> The participants have viewed and studied *St. Francis in the Desert* by Giovanni Bellini, ca. 1480, at The Frick Collection for making observations and verbal discussion. See Artful Perception Website 12 April 2010 < <http://artfulperception.com/>>

<sup>115</sup> Nancy Blume, Jean Henning, Amy Herman and Nancy Richner. “Looking to Learn: Museum Educators and Aesthetic Education,” *Journal of Aesthetic Education*, 2008, 96.

<sup>116</sup> See articles by Berger, 2001, Herman, 2007, and Ellen Bryon. “To Master the Art of Solving Crimes, Cops Study Vermeer,” *The Wall Street Journal*, 27 July 2005, A1.

<sup>117</sup> Neal Hirschfield, “Teaching Cops to See At New York City’s Metropolitan Museum of Art, Amy Herman schools police in the fine art of deductive observation” (*Smithsonian*, October 2009), 5.

favorable accolades on how her program has enhanced the observational, interpretation, and verbal literacy skills of the NYPD law enforcement officers.

Since leaving The Frick Collection in 2007, Ms. Herman has established a thriving consulting business, *Artful Perception*. She is a consultant to various education schools, medical schools, and private businesses. Ms. Herman conducts the “Art Of Perception” observational program with medical students at New York University Medical School. The observational program is part of a semester-long elective course for first to fourth year medical students. Herman conducts a total of four sessions of approximately two hours in length. The two sessions in the classroom prepare the medical students for what they will be doing at the museum. The other two sessions are conducted at the museum setting, and are similar to the previous observational programs Ms. Herman conducted with Weill Cornell Medical College at The Frick Collection.<sup>118</sup>

Ms. Herman engages the medical students in visual analysis and critical thinking as they view artworks. The faculty are involved as advisors to the program and in planning the program with Ms. Herman. The faculty attend all sessions and encourage meaningful discussion. The medical students write a short essay about the clinical or practical applications that they have learned from the “Art of Perception.” The medical students’ essays indicate a positive development in their observational and verbal literacy skills. Ms. Herman states, “these papers were fascinating and it was clear to me that [the medical students] have gotten the point of the class.”<sup>119</sup> The professional development

---

<sup>118</sup> The program was conducted at The Frick Collection and is now conducted at the Metropolitan Museum of Art.

<sup>119</sup> Amy E. Herman private email to author on April 1, 2010.

skills the medical students gain are “the ability to observe without referring to someone else's impressions” and “to trust their [own] instincts.”<sup>120</sup> She is confident that the medical students have learned to distinguish between observation, perception, and inference as well.

Through her work with developing an observation program with medical students, Ms. Herman is a consultant to state and federal law enforcement agencies. Her clients include the Federal Bureau of Investigation, the Department of Justice and the Secret Service, Homeland Security, Transportation Security Administration (TSA), and other homicide police officers.<sup>121</sup> “Art of Perception” has become a valuable source for intensifying the observation and visual literacy skills for law enforcement agencies. Herman conducts the “Art of Perception” at the Metropolitan Museum of Art in New York City and at the Smithsonian Institute in Washington, D.C.<sup>122</sup> Her clients cover all the fees and costs for the observation program.

Since leaving The Frick Collection, Ms. Herman has become the Director of Education at WNET in New York City, and is involved with the National Endowment for Humanities (NEH) *Picturing America* program whose objective is to use artwork to connect students with the heritage of America.<sup>123</sup> *Picturing America* includes video

---

<sup>120</sup> Amy E. Herman private email to author on April 1, 2010.

<sup>121</sup> Amy Herman phone interview with author on January 18, 2010 and list of clients on Artful Perception Website 12 April 2010 <<http://artfulperception.com/participants.php>>

<sup>122</sup> At the MET *Madame X* by John Singer Sargent, ca. 1883-84 is studied. One can imagine that the violet luminous color of the subject's skin tone, facial expression, and pose are observed, interpreted, and discussed.

<sup>123</sup> See *Picturing America* Website for more details of program 10 April 2010 <<http://picturingamerica.neh.gov/>>

presentations, online sources of artwork, and other materials available to educators to teach the cultural history of America to students. *Picturing America's* collection contains museum artworks from all over the world and WNET has also put together short video presentations that feature the artworks in *Picturing America*. The objective of these video presentations is to help educators use *Picturing America* collection in their classrooms for teaching. Librarians and educators “learn new ways to engage with and understand the *Picturing America* collection using *The Art of Perception*, a nationally recognized training program that teaches a wide range of professionals to enhance observation and communication skills by learning to look at and analyze works of art.”<sup>124</sup> WNET’s video recording of the “Art of Perception” seminar is available and used as a learning approach for teaching American history and culture through art. *Picturing America* and “Art of Perception” together help to increase the learning of American heritage through art. These programs also show participants the valuable resources of museums worldwide in heightening the appreciation of learning for personal and professional needs of the public.

*Conclusion:*

The programs at Toledo Museum of Art (Case Study 1) and at National Ranching Heritage Center (Case Study 2) demonstrate the value of using hands-on experiences with museum objects to build and assist learning in children and teaching skills in educators. Both of the professors use reflective journals to propel the students to gain more knowledge after the experience that will aid in better understanding their education career

---

<sup>124</sup> See the Programming Librarian Website for more details of the WNET “Art of Perception” program 10 April 2010 <<http://www.programminglibrarian.org/blog/2010/january-2010/attend-picturing-america-in-our-nations-libraries.html>>

purpose in the future. Both use the museum environment for an in-the-field service project to promote learning and motivation of their students' career development.

At Yale Center for British Arts (Case Study 3) and at The Frick Collection (Case Study 4), the hands-on experiences with objects of art build and expand observation, interpretation, and verbal literacy skills in the future careers of the medical students. The last two case studies also demonstrate how observational programs have become reliable resources for sharpening observational and verbal literacy skills in other professions. All of the case studies indicate how instructors use open-ended questions, reflection, and open discussion to enhance the overall professional and personal learning experience for the participants.

The documented evaluation study at Yale University Medical School and the Yale Center for British Arts found a 10% increase in observation and verbal literacy skills in medical students. This observational program at Yale Center for British Arts evaluation was conducted shortly after only one session at the museum. Another documented evaluation study at Harvard University and the Museum of Fine Arts found a 38% increase of professional development skills in medical students. This study provided multiple (seven or more) sessions at the Museum of Fine Arts. The documented study at Cincinnati University and the Cincinnati Museum of Art evaluated the effects of learning more than one year after the medical students participated in the observational program. Similar to the study at Harvard University, the two programs had multiple museum sessions. These three evaluation studies emphasize that the potential for and

improvement of learning increases with more sessions at museums and that the effects of learning may be more demonstrated over time than immediately after the program.

### **Chapter 3: Museum Professional Development Partnerships** *Implementation of other Museum Professional Development Programs*

Museums affiliated with universities have been actively involved in conducting workshops with faculty to ascertain how museums can aid and improve curricula for university students. Using a museum to offer different approaches to learning career skills may not be the first teaching strategy that professors or other professionals will think of, but many museum have been actively involved in demonstrating how their settings can be excellent resources for learning and facilitating interdisciplinary skills. The objective of the professionals is to use the museum to expose participants to actively engage in enriching educational programs. These programs offer different approaches for developing career related skills. Museum educational programs open new and distinctive doors to learning that enrich participants' overall learning and can be demonstrated in their classrooms and work environments.

The Spencer Museum of Art has been offering the faculty at the University of Kansas a faculty-training program called "University in the Art Museum," since the late 1990s.<sup>125</sup> The objective of the program is to engage and train faculty members to integrate the museum's art collection into various curricula. The program has been instrumental in developing interdisciplinary conversations among the faculty and museum staff as well. The faculty has used the museum's galleries and special exhibitions to encourage university students to seek and gain knowledge in new and

---

<sup>125</sup> Pat Villeneuve, "University In the Art Museum: A Model for Museum-Faculty Collaboration" (*Art Education*, Jan 2006), 16. 2006, 13. Villeneuve developed this program while she was curator of education at Spencer Art Museum. She is now an associate professor at Florida State University and was awarded the National Art Education Museum Educator of the year in 2009.



different ways. The artwork can aid university students' identifying with a particular time period or historical event. A sociology professor notes that the museum's artwork collection from the 1960s has been valuable in increasing her students' interest in and understanding of the culture and issues of the 1960s. Visual Thinking Strategies are employed to actively engage university students to learn and understand with visual literacy, verbal communication and thinking about the cultural implications of a generation with which they are not familiar. An English professor comments that her students have found the artworks instrumental to their understanding of the literature they are reading in class. The English professor assigns her students to choose an artwork to write a narrative story about. This activity aids the student in utilizing the linguistic and spatial intelligences from the Multiple Intelligence Theory.<sup>126</sup>

The "University in the Art Museum" program has been successful in directing the faculty of the university community to use new and different approaches in teaching their curricula. The purpose is to improve the teaching goals of the faculty and build learning opportunities for the students. The museum has become more recognized for its value in the overall university community, and has had to increase the number of graduate teaching assistants to support the needs of the faculty and student population using the museum.<sup>127</sup>

The collaboration between the Science Museum of Minnesota (SMM) and the Minnesota Science Teachers Association (MnSTA) demonstrates how a museum setting, collection and staff are valuable in meeting the professional needs of middle school

---

<sup>126</sup> Darling-Hammond et al, 2003, 75.

<sup>127</sup> Villeneuve, 2006, 16.

education science teachers. In 1994, the SMM began offering “Life Through the Ages,” a workshop program with the purpose of familiarizing educators from the MnSTA with hands-on investigation, interaction with paleontologists, and planning for integrating the topic of evolution into the science curriculum. The MnSTA had reached out to the SMM for guidance on how to approach and teach the often-controversial topic to their students. The objectives of this program are to demonstrate how the resources at SMM can be integrated into classroom curricula for teachers and how “museums and science centers can support almost any science topic.”<sup>128</sup> SMM continually strives to show teachers that museums offer more than merely exhibits: they offer “specimens, and artifacts but also access to scientists, teaching materials, and professionals who can help plan field trips, answer questions, and design and present professional development” programs.<sup>129</sup>

Since its initial workshop during the summer of 1994, SMM offers teachers approximately sixty educational development workshops with different science topics. The programs “demonstrate both the powerful enrichment value of an informal institution and the effective use of museum resources.”<sup>130</sup> SMM has put great effort into understanding the diverse needs of the teachers. The museum has designed its workshops to meet state and national standards, and to keep teachers up to date with current educational research. The teachers learn “inquiry strategies, content and skills through the process of discovery and through framing their own questions.”<sup>131</sup> SMM has the

---

<sup>128</sup> Lee Schmitt. “Helping Teachers Teach: A learner-Centered Approach to Professional Development,” *ASTC Dimensions*, Nov/Dec 2002, 2.

<sup>129</sup> Schmitt, 2002, 1.

<sup>130</sup> Schmitt, 2002, 2.

<sup>131</sup> Schmitt, 2002, 2.

teachers “wear the student hat” in order to heighten their teaching skills in the classroom.<sup>132</sup> The workshops stress the need for teachers to reflect on what they have learned so that they can better understand the learning styles of their students. The SMM offers teacher conferences, special exhibitions, and film previews that focus on making its value and resources more visible to the area schools as well.

In addition to the new experiences of supporting educators’ classroom instruction and teaching techniques, museum partnerships empower educators. Educators reflect, ask questions, discuss, and experiment to expand their theoretical knowledge and interpretations to create new knowledge during and after their museum program. The new knowledge enhances educators’ teaching strategies. Museum programs can expand the traditional approach with which educators are familiar to teach and show them the benefits of using informal museum learning sites for future field trips with their students. Museum partnerships help educators attain new and meaningful learning experiences that they can implement into their careers.

Museums also inspire participants to seek new ways in which to gain and share knowledge that deepens their overall professions and personal learning. In 2008, the Meadows Museum at the Southern Methodist University in Dallas, Texas, collaborated in a semester-long course offered to 110 university students with eleven faculty members from multidisciplinary departments.<sup>133</sup> Mark Roglán, director of the Meadows Museum, and Bonnie Wheeler, an associate professor of English and director of medieval studies,

---

<sup>132</sup> Schmitt, 2002 2-3.

<sup>133</sup> The multidisciplinary departments included art history, law, English, theology, engineering, and music.

collaborated to engage university students in an elective course that focused on studying a 26-panel altarpiece at the museum and university.<sup>134</sup> The engineering professor was able to demonstrate to the university students how “infrared rays and ultra violet light have made it possible to examine the paintings’ many layers, including early sketches and even the artist’s notes.”<sup>135</sup> The university students were inspired and empowered with learning about the altarpiece aesthetically and in connection to their own field of study and other areas of study. A law professor taught curriculum about ethical questions with intellectual property and ownership of medieval treasures. The music professor engaged students in medieval music to learn and perform. The students worked in groups to create musical performances, videos, and models of cathedrals from medieval times. This course is an instructive example of demonstrating how museum settings, their collections and staff are valuable resources in offering opportunities to augment learning and knowledge of students within their fields of study and in other disciplines.

These three museum educational programs demonstrate the active role museums have had in being instrumental in connecting the learning objectives of professionals and students with their personal and professional needs. The programs introduce and show educators, university faculty and student participants the valuable resource museums can be in aiding and improving learning opportunities. Through hands-on and minds-on

---

<sup>134</sup> The altarpiece was original from a 15<sup>th</sup> century Spanish Cathedral, Ciudad Rodrigo in Castille, Spain. The artists were Fernando Gallego and Maestro Bartolomé, and the panels were painted in oil and tempera between 1480 and 1500. The panels portray biblical scenes from the Creation to the Last Judgment. The altarpiece was on loan to Meadows Museum from the University of Arizona Museum of Art at the time of the program.

<sup>135</sup> Katherine Mangan. "Encountering the Middle Ages: Spain and the Meadows Museum," *Chronicle of Higher Education*, June 2008,1.

opportunities the programs provide new and different environments to engage and interest participants to learn. These museum partnerships demonstrate the active commitment museums and their partners have in planning and executing educational programs to improve the potential of intensifying learning that will have lasting effects on participants' career goals and professional development.

## Chapter 4: Conclusion

Museums offer their settings, staff and collections in order to motivate and facilitate learning in visitors. Exhibitions and educational programs at museums enhance visitors' learning as well. The partnerships that museums have cultivated and implemented with professionals seeking new approaches to improve their professional skills and to further their personal ambitions have been investigated and reviewed in cited programs. The professional staffs at museums utilize learning theories and methods to encourage learning opportunities that are educational and increase participants' overall knowledge. Museums offer professionals:

- Different and visually stimulating environment from the classroom or workplace
- Social interaction within their walls through handling and discussion of objects
- Different ways of learning new concepts with their collection
- Opportunities to scaffold prior knowledge to create new knowledge
- Opportunities to inspire and engage participants in civic-oriented service learning outside of their walls
- Opportunities for thought and reflection to encourage participants' learning
- Applications of educational learning theories that enhance participants' abilities to have learning opportunities that will increase knowledge

Stimulating discovery and learning requires being attentive to participants' approaches to gaining knowledge in museums. Museum educators can employ multiple intelligence styles to further their participants' development to "think about an idea in more than one way."<sup>136</sup> Thinking about a concept or idea in a different way can aid in memory retention. Howard Gardner contends that museums offer a different environment in which to support new ways of learning. In addition, museum objects engage participants to think beyond what they previously know. Objects help

---

<sup>136</sup> Darling-Hammond et al, 2003, 75-76, 79.

participants form new perceptions and understanding about objects, themselves and the world.<sup>137</sup> Piaget, Vygotsky and Dewey felt objects are vital tools for increasing meaningful learning experiences in children and adults. Museum objects and programs heighten learning that empowers the participants with different experiences and knowledge to employ in their careers and personal lives.

Furthermore, to help one attain new knowledge, a sense of enjoyment assists the overall learning experience of participating in museum educational programs. The validity of this approach is confirmed by Mihaly Csikszentmihalyi, director of the Quality of Life Research Center (QLRC) and known for his work on happiness and creativity believes in the importance of enjoyment in improving learning and the quality of life. Csikszentmihalyi believes that participants will more readily engage in quality experiences if they are enjoyable. Enjoyment of learning challenges the mind to acquire new skills. He contends that participants describe their new learning experience with one or more elements of enjoyment when they reflect on the overall experience. Participants will describe the encounter as one that enables concentration on the activity, achieving set goals, some feedback and/or social interaction. Participants gain a sense of control over what they are doing, and that improves the learning process.<sup>138</sup> Museums offer opportunities to engage, to challenge, and to increase the learning potential in participants in new, different and enjoyable ways.

---

<sup>137</sup> Dorothea Lasky, "Learning from Objects: A Future for 21st Century Urban Arts Education," *Penn GSE Perspectives on Urban Education* 6.2 (2009): 72-76.

<sup>138</sup> Mihaly Csikszentmihalyi, *Flow: The Classic Work on How to Achieve Happiness*, USA: Harper Row, 2002, 48-50.

Humans are social by nature and social interacting is a component of how humans connect and find meaning-making experiences. The opportunity to express ideas and share the meaning of the learning experience is possible at museums since the museum environment is a social as well as an educational experience. Vygotsky believed that social interaction increased the personal learning development in individuals. Social interaction aids in the scaffolding of previous knowledge with new experiences and knowledge. Museum environments and professionals contribute measurably to visitors' learning experience with ease and confidence of informal social interaction.

The partnerships that museums have cultivated for the improvement and heightening of skills for professionals and students have shown an increase in learning and new knowledge gained. Participants have sharpened their visual analysis and critical thinking to deepen their professional knowledge and abilities in their careers. The case studies portrayed examined the important value that museums have in improving professionals' and students' career objectives and professional development skills. These partnerships are valuable opportunities for museums to demonstrate their overall value and dedication to the needs and desires of the community as well. The commitment of museums to the community demonstrates their proactive involvement in enlightening their visitors and motivating learning that enriches learning goals and future endeavors of their participants.



## **Bibliography:**

Caniglia, Joanne. "Math in the City: Experiencing Mathematics Through Visiting Black Historic Sites." *The Journal of Experiential Education*, Fall 2003: 26.2, 70-74.

Dhingra, Koshi, Eleanor Miele, Maritza MacDonald and Wayne Powell. "Museum-College-School: A Collaborative Model for Science Teacher Preparation." *ERIC*. EBSCO. Web. 11 Apr. 2010. Paper presented at the Annual Meeting of the American Educational research Association (Seattle, WA), April 2001.

Greenblatt, Melinda. "Reach out to riches: collaborating with museums and cultural Institutions to enhance learning." *Teacher Librarian*, June 2006: 33.5, 30-35.

Kalin, Nadine, Kit Grauer, Jill Baird and Cheryl Meszaros.  
"Provoking Points of Convergence: Museum and University Collaborating and Co-evolving." *Journal of Arts and Design Education (JADE)*, June 2007: 26.2, 199-205.

Pershey, Monica Gordon and Simone Arias. "Views of improving the preparation of social studies and history teachers: Involving preservice teachers and history museums." *Educational Research Quarterly*, Sept 2000: 24.1, 67-82.

Villeneuve, Pat and Donald Sheppard, "Close to Home: Studying Art and Your Community." *Art Education*, Jan 2009: 62.1, 6-13.

Wade, Rahima. "Community Service Learning and Social Studies Curriculum: Challenges to Effective Practice." *The Social Studies*, Sep/Oct 1997: 88, 197-202.

### **Cited Sources:**

Ansbacher, Ted. "John Dewey's Experiences and Education: Lessons for Museums." *Curator*, March 1998: 41.1, 36-49.

Artful Perception. Home Page Website Accessed 08 April 2010

< <http://artfulperception.com/> >

Description of Ms. Herman's work and business and includes the Smithsonian article published in 2009, Wall Street article published in 2005, New York Times article published in 2001, and Museum News article published in 2007. (Hirschfield, 2009, Berger, 2001, Bryon, 2005 Herman, 2007)

Artful Perception. Participant client list Website Accessed 12 April 2010

<<http://artfulperception.com/participants.php>>

- Bardes, Charles L, M.D, Debra Gillers, M.D, and Amy E Herman. "Learning to look: developing clinical observational skills at an art museum." *Medical Education*, 2001: 35.12, 1157-1161. *Academic Search Premier*. EBSCO. Web. 21 Feb 2010.
- Berger, Leslie. "By Observing Art, Med Students Learn Art of Observation." *The New York Times*, 02 Jan 2001, F5.
- Blume, Nancy, Jean Henning, Amy Herman and Nancy Richner. "Looking to Learn: Museum Educators and Aesthetic Education." *Journal of Aesthetic Education*, Summer 2008: 42.2, 83-100.
- Bryon, Ellen. "To Master the Art of Solving Crimes, Cops Study Vermeer." *The Wall Street Journal*, 27 July 2005, A1.
- Crain, William, 2000. *Theories of Development*. "Piaget's Cognitive-Development Theory" (Ch.6, 110-145); "Vygotsky's Social-Historical Theory of Cognitive Development" (Ch. 10, 213-243), NJ: Prentice Hall, 4<sup>th</sup> ed., 2000.
- Csikszentmihalyi, Mihaly. *Flow: The Classic Work on How to Achieve Happiness*. 1992. USA: Harper Row, London: Random House Group Ltd., 2002.
- Danko-McGhee, Katherine. "The Museum-University Connection: Partnerships in Early Education Art Experiences." *Art Education*, Nov 2004: 57.6, 35-40.
- Danko-McGhee, Katherine, Ph.D. professor at University of Toledo. Phone interview with Victoria A. Jensen on January 11, 2010.
- Darling-Hammond, L., Austin, K., Lit I., & Martin, D., (2003). "Different Kinds of Smart: Multiple Intelligences." *The Learning Classroom*, 2003: 73-80 [Online] Available at: [http://www.learner.org/courses/learningclassroom/support/04\\_mult\\_intel.pdf](http://www.learner.org/courses/learningclassroom/support/04_mult_intel.pdf) [accessed 27 March 2010]
- Dewey, John. "Experience and Thinking." *Democracy and Education*. Stillwell, KS: Digireads.com, 2005: 83-90.
- Doley, Jacqueline C., M.D, Linda Krohner Friedlaender, MS, and Irwin M. Braverman, M.D. "Use of Fine Art to Enhance Visual Diagnostic Skills." *Journal of American Medical Association (JAMA)*, 2001: 286.9, 1020.

- Elder, Nancy C., Barbara Tobias, Amber Lucero-Criswell and Linda Goldenhar. "The Art of Observation: Impact of a Family Medicine and Art Museum Partnership on Student Education." *Medical Student Education*, June 2006: 38.6, 393-398.
- Falk, John D., Lynn D. Dierking and Susan Foutz, Eds. *In Principle, In Practice: Museums as Learning Institutions*, MD: Alta Mira Press, 2007.
- Falk, John H. and Lynn D. Dierking. *Learning from Museums: Visitor Experiences and the Making of Meaning*, MD: AltaMira Press, 2000.
- Falk, John H. and Lynn D. Dierking. *The Museum Experience*, 1992. Washington, D.C.: Whalesback Books, 1997.
- Friedlaender, Linda. Curator of education at YCBA. Phone interview with Victoria A. Jensen on February 15, 2010.
- Fryer, Douglas H., Edwin R. Henry and Charles P. Sparks, *General Psychology*, 1954. NY: Barnes and Noble, 1956.
- Hawker, Sara, ed. "Intelligence." *Oxford English Dictionary*. 3<sup>rd</sup> edition. Oxford: Oxford University Press, 2006.
- Hein George E., *Learning in the Museum*, New York: Routledge, 1998.
- Hopper-Greenhill, Eilean, Ed. "The Constructivist Museum." *The Educational Role of the Museum*, 1994. New York: Routledge, 2007.
- Herman, Amy E. director of education WNET, "Art of Observation" and "Art of Perception" programs. Phone interview with Victoria A. Jensen on January 18, 2010.
- Herman, Amy E. Herman, Amy E. director of education WNET, "Art of Observation" and "Art of Perception" programs. Phone interview with Victoria A. Jensen on January 18, 2010.
- Herman, Amy E. "How the Long Arm of the Law is Reaching The Frick Collection." *Museum News*, May/June 2007: 84-87.
- Lasky, Dorothea. "Learning from Objects: A Future for 21st Century Urban Arts Education." *Penn GSE Perspectives on Urban Education* 6.2 (2009): 72-76. ERIC. EBSCO. Web. 25 Apr. 2010.

Lubbock Lake Landmark. Home Page Accessed 07 April 2010

<<http://interoz.com/lubbock/landmark.htm>>

Mangan, Katherine, "Encountering the Middle Ages: Spain and the Meadows Museum." *Chronicle of Higher Education*, June 2008: 54.40, A17.

Mc Garvey, Kathleen. "Practicing the Art of Observation." Rochester Review, Jan/Feb 2008: 70.3 available online 11 April 2010

<<http://www.rochester.edu/pr/Review/V70N3/feature1.html>>

Medicine at Yale. "Yale innovation in the art of observation extends its reach." *Medicine @ Yale*, Mar/Apr 2006: 2.2, 6 available online 11 April 2010

<[http://www.medicineat Yale.org/v2i2\\_march\\_april2006/innovation.html](http://www.medicineat Yale.org/v2i2_march_april2006/innovation.html)>

Melber, Leah M. "Museums and Teacher Professional Development in Science: Balancing Educator Needs and Institutional Mission." *Science Educator*, Spring 2007: 16.1, 34-41

Mininberg, David T. M.D., Nancy Thompson, Ph.D, and Joseph J. Fins, M.D. "The Art Of Medicine at the Metropolitan Museum of Art." *Museum News*, May/June 2005: 84.3, 63-66

Moffat, Hazel and Vicky Woollard. *Museum & Gallery Education*. CA: AltaMira Press, 1999.

Naghshineh, Sheila, M.D, Janet P. Hafler, Ed.D, Alexa R. Miller, Maria A. Blanco, Stuart R. Lipsitz, Sc.D, Rachel P. Dubroff, M.D, Shahram Khoshbin, M.D, and Joel T. Katz, M.D. "Formal Art Observation Training Improves Medical Students' Visual Diagnostic Skills." *Journal of General Internal Medicine Journal (JGIM)*, July 2008: 23.7, 991-997.

National Ranching Heritage Center. Home Page Accessed 10 April 2010.

<<http://interoz.com/lubbock/ranch.htm>>

Ormond, Jeanne Ellis. *Educational Psychology, Developing Learners 6<sup>th</sup> Edition*, 1995. NJ: Pearson, 2008.

Piaget, Jean and Barbel Inhelder, *The Psychology of the child*. NY: Basic Books, 2000.

Picturing America. Home Page Website Accessed 10 April 2010

<<http://picturingamerica.neh.gov/>>

Programming Librarian Blog. WNET and the “Art of Perception” program with *Picturing America* Accessed 12 April 2010  
<http://www.programminglibrarian.org/blog/2010/january-2010/attend-picturing-america-in-our-nations-libraries.html>

Singer, Dorothy G. and Tracey A. Revenson. *Piaget Primer*. NY: Plume, 1996.

Schmitt, Lee. (2002). “Helping Teachers Teach: A Learner-Centered Approach to Professional Development.” *Association of Science Technology Centers (ASTC): Dimensions: Association of Science Technology Centers* (ASTC), Nov/Dec 2002: 1-4. Available online 12 April 2010  
<<http://www.astc.org/pubs/dimensions/2002/nov-dec/teachers.htm>>

Smithsonian article 2009:

Hirschfield, Neal, “Teaching Cops to See At New York City's Metropolitan Museum of Art, Amy Herman schools police in the fine art of deductive observation.” *Smithsonian*, October 2009, 1-5 Accessed 10 April 2010  
<<http://www.smithsonianmag.com/arts-culture/Teaching-Cops-to-See.html?c=y&page=1#ixzz0koP0cjJ9>>

South Plains Education Resource Collaborative (SPERC) Accessed 07 April 2010.  
<<http://www.ciser.ttu.edu/sperc/default.aspx>>

Tenement Museum, New York Accessed 18 April 2010.  
<<http://www.tenement.org/>>

Texas Tech University. Lubbock Lake Landmark Accessed 07 April 2010.  
<<http://www.depts.ttu.edu/museumttu/lll/>>

Todd, Reese and Stephanie Gray Brinkman. “Service Learning in a Social Studies Methods Course: Experience and Place-Based Curriculum.” *The Educational Forum*, 2008: 72.1, 79-91.

Todd, Reese, Ph.D. professor at Texas Tech University. Phone interview with Victoria A. Jensen on January 14, 2010.

Wade, Rahima C., “Developing active citizens: Community service learning in social studies teacher education.” *The Social Studies*, May 1995: 86.3, 122-128

University of California, Irvine:

Shapiro, Johanna, Lloyd Rucker and Jill Beck. “Training the clinical eye and mind: using the arts to develop medical students’ observational and pattern recognition skills.” *Medical Education*, 2006: 40, 263–268.

University of Rochester: (note article previously cited for content)  
Mc Garvey, Kathleen. "Practicing the Art of Observation." *Rochester Review*  
Jan/Feb 2008: 70.3 Accessed 08 April 2010  
<<http://www.rochester.edu/pr/Review/V70N3/feature1.html>>

University Of Texas:  
Observational Program. 2003 Accessed 08 April 2010  
<<http://www.uth.tmc.edu/oto/ArtInstruction.htm>>

(Note: Newspaper article about program at the University of Texas)  
Raine, Meredith. "A Picture of Health: By studying art, students learn skills for  
observing patients." *Houston Chronicle*, 02 Nov 2003

Villeneuve, Pat, Amanda Martin-Harmon and Kristina E. Mitchell.  
"University in the Art Museum: A Model for Museum-Faculty Collaboration." *Art*  
*Education*, Jan 2006: 59.1, 12-17.

VUE Home Page and Visual Thinking Strategies Website Accessed  
09 April 2010 <<http://www.vtshome.org/>>

VUE Publications:  
"Visual Thinking Strategies: VTS Research and Theory." *VUE*, Spring 2009.  
"Understanding the Basics." *VUE*. 2001.

Weill Cornell Medical College:  
The Frick Collection. Weill Cornell Medical College and "Art of Observation."  
Program. Accessed 08 April 2010.

Yale Center for British Arts. Educational Programs Website Assessed 08 April 2010.  
<[http://ycba.yale.edu/education/edu\\_educ.html](http://ycba.yale.edu/education/edu_educ.html)>

Yale Center for British Arts. Video of "Art of Observation" program Website 2009  
Accessed 08 April 2010.  
<<http://opa.yale.edu/media/video/ArtMedicine-20090407.mov>>