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Evidence of heterarchical planning within higher education institutions: learning garden planning and development at Rowan University

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EVIDENCE OF HETERARCHIAL PLANNING WITHIN HIGHER EDUCATION INSTITUTIONS: LEARNING GARDEN PLANNING AND DEVELOPMENT AT ROWAN UNIVERSITY

by
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ABSTRACT

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The purpose of this study was to examine attitudes during the early stages of planning for an educational garden at Rowan University. This study also attempted to fill the gap in the literature that exists between garden planning and development and planning at higher education institutions. The investigator surveyed 20 committee members involved in this large-scale project, in addition to interviewing six committee members who were considered key stakeholders and have displayed high levels of involvement during the initial stages of the project. Participants were administered a Likert-scale survey that looked for the emergence of heterarchial practices during the development of the Rowan University Learning Garden. The interviews were conducted to develop a deeper understanding the elements of heterarchy. Survey data suggested that while committee members support interdisciplinary projects that are relevant to the institution's culture, such projects might lack clear communication and direction. The interview data indicate this project has emerging elements of heterarchy, though some of the participants expressed financial concerns, unclear direction, and lack of project development.

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CHAPTER ONE

INTRODUCTION

Higher education institutions operate and make decisions collectively to better achieve their missions and visions. Projects are approved based on a series of rigorous reviews by committees, and committees are typically formed to carry out specific projects. While learning gardens have typically remained projects undertaken in elementary and secondary education settings, those in higher education are beginning to see the benefit of using gardens and plant life as educational tools for many academic subjects and community outreach.

Statement of the Problem

Learning gardens are becoming increasingly popular in educational settings to teach academic subjects, health, and social interaction among children. While many of these gardens have been constructed in elementary schools, they are beginning to spill over into college and university campuses, for these institutions are discovering various benefits of having a garden at their disposal. Though there is a vast amount of literature about planning in higher education institutions, a gap exists in the planning and construction of a learning garden in such a setting.

Purpose of the Study

The purpose of this study was to discover the application of Austin's (2002) model of heterarchy and the planning of a learning garden at Rowan University. An eight-question interview was conducted with key stakeholders in the Learning Garden

Committee, while surveys were distributed to additional committee members to measure effectiveness in collaboration with interdisciplinary projects and attributes of heterarchial practices.

Significance of the Study

Because Rowan University wishes to excel in research and strives to one day become an emerging research institution, developing an understanding of effective planning processes for large-scale projects will help to measure the institution's success as a campus community. Also, this study attempted to fill in the gap between literature on learning gardens in elementary schools and planning in higher education.

Assumptions and Limitations

The study provided further insight into effective collaboration for large-scale projects at Rowan University. The findings created a deeper understanding of best practices for committee interaction and creating a sense of pride and accomplishment. It is assumed that all participants who viewed the survey completed it in its entirety and answered all questions honestly. It is also assumed that all participants interviewed answered all questions honestly and to the best of their knowledge.

The project was limited by the number of committee members involved in the Learning Garden project willing to participate in this study. Also, this study did not measure the planning behaviors and attitudes of other committees at Rowan University. Therefore, the results of this study cannot be generalized to committees working on other projects. In addition, a potential for researcher bias exists because the investigator was a member of the Learning Garden Committee at Rowan University.

Operational Definitions

1. Committee: Collective body of faculty, administrators, and students at Rowan University that approve and undertake specific projects.
2. Collaboration: More than one academic discipline or administrative department at Rowan University participating in a single task or project through consultation and exchanging ideas.
3. Heterarchy: Austin's (2002) model of heterarchy is defined by type of leadership and management style that advocates personal and professional empowerment, open communication, collaboration, effective time management, embracing organizational culture, and establishing expectations. In this system, leaders "empower change, react and reconstruct the system when necessary, and envision and proactively forecast structural needs" (2002, p.25). The three elements of a heterarchy include: institutional, departmental, and individual, are defined by the following:

   4a. Institutional: For the purpose of this study, the institution being study was Rowan University.

   4b. Departmental: The departmental elements of this project were the committees involved in the planning of the learning garden at Rowan University.

   4c. Individual: The individuals in the heterarchial model were the faculty and administrators that make up the committees for the learning garden project to Rowan University.

4. Interdisciplinary: Any project at Rowan University that requires input and contribution from more than one academic discipline or administrative department.
5. Key Stakeholders: Committee members who are considered to be highly involved in the Children's Learning Garden at Rowan University. Key stakeholders have attended all committee meetings from the beginning, have specific projects they are interested in implementing, and maintain frequent communication with other committee members. Key stakeholders are from the following units at Rowan University: Art Department, College of Communication, College of Education, College of Engineering, Grants and Research, and Maintenance and Facilities.
6. Learning Garden: For the purpose of this study, a learning garden is defined as a current project being initiated at Rowan University that includes plant life, natural exhibits, and other natural entities that can be applied to classroom instruction, community service, and university-based research.
7. Planning: The development and implementation of any project or task at Rowan University.

Research Questions

The following research questions guided the study:

1. What characteristics in the planning process do selected Rowan University Learning Garden Committee members attribute to heterarchial practices?
2. Is there a significant relationship between the demographic variables of Learning Garden committee members and characteristics of the planning process attributed to heterarchy?

3. Are elements of heterarchy displayed in the operations and functions of the Learning Garden Committee?

4. How do key stakeholders of the Learning Garden describe the planning process for this project in relation to characteristics of heterarchial principles of planning?

Report Organization

Chapter two provides insight into the trends of structures, governance, and planning procedures in higher education institutions. The use and success of learning gardens in school settings is also discussed, in addition to theories about collaboration and heterarchial structures in organizations. Information about Rowan University's Campus Master Plan is also included.

Chapter three consists of the methodology and procedures for administration of the surveys, interview of selected committee members, and data collection. It discusses sample size and information about the population and planning patterns being studied, instrumentation, data collection, and data analysis.

Chapter four provides a description of the study and summary of the data. The research questions are examined in this section. Data analysis are presented in tables and narrative form based upon the findings of the study.

Chapter five concludes with a summary of the study, discussion of the findings, conclusions, and recommendations for practice and further research.

CHAPTER TWO

REVIEW OF THE LITERATURE

To fully understand planning systems in colleges and universities, it is important to acknowledge that higher education institutions operate differently from typical corporations and businesses outside of the educational realm. College and universities function by implementing a unique system of shared governance. The Association of Governing Boards (1996) defines shared governance as "the system composed of structures and processes, through which faculty, administrators, and other campus constituents make collective institutional decisions" (p.85). Along with this concept of functioning comes a sense of autonomy, committee formation, and collaborative decision-making to further advance an institution's mission and goals (Minor, 2003).

This chapter begins with a discussion of the planning trends in higher education from 1970s to the present. Then, it highlights research on collaboration and Austin's (2002) heterarchial model for organizations along with institutional difficulties with resistance to change. Finally, it discusses recent literature on the various benefits of gardens and the existing gap between planning for a learning garden in a higher education setting.

Trends in Planning in Higher Education Settings

Over the years, outside influences, culture, and the desire for change have all been factors that determine how a higher education institution operates. Weick (1976) describes educational organizations as being loosely coupled, meaning departments and

divisions of the organization "preserve their own identity" while interacting or planning with other facets of the organization on a low level (p. 3). Weick also claims that functioning in this way is advantageous in academic institutions because it allows them to be unresponsive to change while maintaining normal functioning (1976). Therefore, operating with disconnected, weak connections between departments is considered an adaptive behavior due to the nature and purpose of higher education. These loosely coupled systems have also been described as "organized anarchies" (Lutz, 1982, p. 653), for some claim they can quickly adapt to changes that occur in the outside environment in order to survive.

Richardson and Gardner (1983) described planning in higher education as a continuum with four levels of complexity: disjointed, adaptive, strategic, and comprehensive. The least structured type of planning on the continuum, disjointed planning typically occurs when a single institutional departmental unit handles an issue internally. A step above disjointed planning is adaptive planning, where a plan is created to be flexible and responsive to a specific situation. Strategic planning, the third type of planning on the continuum, is highly structured with clearly defined terms and is designed to address external forces to the institution. The most complex approach to planning, comprehensive, is considered highly rationalized, organized, and goal-oriented (1983). Comprehensive planning is applicable to short term and long term plans and requires those involved being receptive and focused on the finished product. This highly functional and collaborative planning style is typically reserved for budgeting, financial issues, and other types of resource allocation (1983). Comprehensive planning is very reliant on evaluation, which often gives way to new planning cycles (1983). Where an

institution falls on this continuum depends on its institutional needs and external influences. Two dimensions also determine the type of planning: the level of complexity of the plan and the source of motivation, or the institutional need, for the plan (1983).

More recently, Birnbaum (1991) writes of universities and colleges existing as collegial systems. Collegial institutions are described as "a community in which status differences are deemphasized and people interact as equals, making it possible to consider the college as a community of colleagues" (1991, p. 86). Operations such as these are similar to loosely coupled organizations and are made up of subgroups that share collective interests through decision-making and symbolism. Because all members in a collegium are considered equals, administrative and rational procedures are replaced with collective, slow decision-making. Typically, all members of the institution share a common vision and mission and seek feedback on decisions from all those who would be affected. Collegial systems are more successful when applied to a smaller environment as opposed to large environments. For example a specific department in an institution with few employees would likely operate as a collegium since all members are close knit and likely share common bonds (1991). Colleges and universities have attempted to emulate this model since it is highly symbolic and emphasizes tradition (1991).

One trend that has remained steady over the years in higher education is the strong presence of faculty in decision-making on campus through the faculty senate (1991). These governing bodies are often viewed as more symbolic than fully functional, yet can still take part in the decision-making process depending on the institution (Birnbaum, 1989). Birnbaum (1989) writes of how faculty senates have several "latent functions," or roles that are viewed as very discreet, that include being ritualistic, a

scapegoat for poor decisions, and other negative attributes. However, because faculty often involve themselves on other campus committees besides the senate their voices are still heard and expertise in certain fields is highly desirable. Minor (2003) writes of faculty members, "although government agencies, trustees, and university presidents will affect campus governance, faculty are often deemed the most conspicuous of governing bodies" (p. 344).

Faculty members are able to have such authority and control in institutions through loosely coupled systems and a slow, collective decision-making process that is characteristic of shared governance (1991). This is unlike larger corporations that operate bureaucratically with high coordination and strict hierarchical roles, giving way to faster decision-making and tighter connections between departments. According to Birnbaum (1991), clearly defined roles lead to predictable work patterns and create efficiency. Because higher education has to react and adjust to outside forces that are highly unpredictable, loosely coupled systems are often more efficient (1991).

Some of the recent literature about planning in higher education focuses on inconsistencies in planning and the difficulties of implementing change in an academic environment. Swenk (1999) writes of the importance of looking for inconsistencies in the open, free-flowing culture of higher education and the attempts to plan in a highly rationalized, structured manner. Administrators who favor comprehensive approaches to planning that involve clear procedures often "clash" culturally with faculty members who manage tasks more loosely (1999, p.2). The larger population of faculty members on campus usually counteracts administrative influence and desire for change. Therefore, Swenk (1999) suggests that administrators accept the stark cultural differences between

themselves and faculty members by using planning methods that are adaptive and flexible to both entities.

Recent Planning Models: Heterarchy

A recent example of a trend in organizational management and planning is Austin's (2002) model of the heterarchy. According to Austin, a heterarchy "emphasizes the human relationships and complexity of networks and functions that abound in the effort to plan and implement change in the modern organization" (2002, p.22). This recent model of planning requires an open communication system with bottom-up management and ownership of a particular vision (2002). While the structure of the organization must allow open communication in order to be successful, the most important aspect understands social interactions and dynamics among the participants (2002). Austin (2002) stresses "empowerment through teamwork" and communicating using "dialogue over monologue" (p. 36). Teams are created to have a set purpose, a sense of identity, and responsibility. Allowing individuals to participate in a project from start to finish increases the chances of creating a sense of ownership and pride for the project (2002). Rowley and Sherman (2001) make a similar point by suggesting that gradual changes over an extended period of time require involvement of those affected as early on to obtain the best results. Heterarchial models require all team members or employees to contribute their talents and passions to project development and the realization that finished projects will need constant adjustment (2001).

Such fluid, networked organizations and institutions are created through the triadic heterarhial-planning model (Austin, 2002). The three elements in this model are institutional, departmental, and personal. These elements can be thought of as levels,

beginning with the individual taking ownership and responsibility of a vision and then incorporating that in their work, hence the bottom-up structure. Such accountability creates a positive, high-energy environment, as opposed to one with complaints that are "filled with destructive levels of pointless debate" (2002, p.75).

According to Austin (2002), high performance teams, or groups that successfully complete projects and implement change, follow a specific system enveloped with a particular vision. An empowered leader must form a strong team and assign team members tasks that showcase their talents. Fluid communication systems are then put in place to ensure participation, inspiration, and motivation. High-level leaders should remove themselves from tasks that were assigned to the team and let the leader of that team take over. The organization meets expectations of the public and those monitoring their progress. Once the organization achieves a vision or accomplishes a large project, celebration and praise are in order (2002).

The heterarichal structure is applicable to all organizations and higher education institutions alike (2002). Because of the implementation of shared governance, committee formation, and interdisciplinary projects in academic institutions, the framework for an emergent heterarchy is already in place for collaborative decision making to occur. The shared vision, the vision of the institution or vision of the project at hand, is the motivator and would be emphasized throughout the course of a particular change or project. Typically, the cooperation and passion of campus faculty and administrators are required to make decisions about projects that change the culture of an institution (2002).

Decision Making and Collaboration in Higher Education

The structure of higher education has allowed units and departments to act alone and in conjunction with other disciplines (Gumport & Snydman, 2002). Departments, faculty members, budget requirements, and course requirements are all smaller parts of a larger structure that react to change alone or together as a community (2002). Despite the disconnectedness of loosely coupled systems in colleges and universities, the shared governance system can prove especially helpful to academic administrators, allowing them to commit themselves and encourage the campus community to recognize the urgency of a problem (Eckel, 2000). When fully functional, shared governance can "bring the various interest groups together in legitimate ways to accomplish a high-stakes task" (Eckel, 2000, p.32).

More recently, many institutional departments have been collaborating on interdisciplinary projects that take advantage of various talents and knowledge bases on campus (Kezar, 2006). Still, it is the same concept of departmental solitude that has often created a barrier to completing successful projects on many campuses (2006). Also, Swenk (1999) argued that it is the notion of academic culture and rational planning that has interfered with implementing change in higher education. Despite shared governance's emphasis on unity and sharing a vision, faculty and administration often remain separate entities and cannot compromise on campus goals and objectives (2006). This often occurs because faculty consider themselves a separate entity from the institution that has their own goals that may be inconsistent with administration and the entire institution (Birnbaum, 1991).

Such notions of collaboration and utilization of talent in project management are directly linked to heterarchial structures. Austin (2002) also mentions that if a team member fails to positively collaborate with other members, he or she should be addressed by sanctions by the team leader. Maintaining a positive environment during the project process will decrease the chance of negative outcomes and loss of team members (Rowley & Sherman, 2001). Team members and employees overall must be able to work in a positive environment that allows them to enjoy their work and feel like they own a piece of the institution and its mission (Austin, 2002).

Resistance to Planning for Change in Higher Education

Because of how academic institutions operate, Eckel (2000) writes, "required and difficult solutions tend to be the 're' words so prevalent in organizational life—restructuring, reducing, reallocating, and refocusing—all of them strategies with which higher education struggles" (p.15). Academic institutions have often been criticized for their lack of response to changes in labor market demands, advancements in technology, and growth in the nontraditional student populations (Gumport & Snydman, 2002). Typically, colleges and universities respond to such demands by simply creating ad hoc additions to departments and curriculums to suffice for the time being (2002). Because of the loosely coupled and disconnected structures in most institutions, decisions and steps forward are typically slow and subtle (Birnbaum, 1991).

The planning process for change can also create conflict between faculty and administration. In higher education settings, faculties are often viewed as holding power (Marcus, 1999). However, during the planning process, especially in the case of budgets and finance, power shifts to the administration, creating discomfort and sometimes

resistance to any changes taking place (1999). As mentioned previously, the most sophisticated form of planning on Richardson and Gardner's (1983) planning continuum is comprehensive planning, a highly rational, cooperative type of planning favored by administrators that often gives way to new planning cycles. While administrators tend to prefer this type of planning and attempt to implement it during times of change, academic departments, however, are less receptive to this comprehensive planning because they believe it interferes with day-to-day interactions with students and classes (1983). Also, faculty members are often uncomfortable with administrative decision-making. The authors suggest trying to maintain a balance in planning methods that will satisfy faculty members and administration to ensure the necessary support for change (1983).

Another reason why certain members of an institution may oppose a specific plan for change is because they may feel their interests are not represented during the planning process (Wilson & Cervero, 1996). For example, if a new program is added to a curriculum, the authors suggest consulting with the instructors of programs in the department affected to make everyone feel a part of the process. Wilson & Cervero (1996) write, "we believe that planners have an ethical obligation to foster a substantively democratic planning process, which means that real choices are put before all the stakeholders in the program" (p. 21). Rather then having stakeholders and others inform those affected about the change, involving these individuals from the start will yield a smooth transition and may result in a better outcome than expected (1996).

Contrasting literature suggests that the role of shared governance in higher education has been beneficial in making some difficult decisions. For example, Eckel (2000) found that four schools that had to discontinue some unsuccessful programs and

close certain colleges were able to rationally come to those decisions through campus communication and working together and taking note of several perspectives. In this particular case, shared governance was able to bring together groups with conflict of interests to form coalitions during critical times to make decisions that affect the entire institution (2000). Also, Birnbaum (1991) suggests that campus wide project participation allows the institution to experience change and stabilization simultaneously. However, external forces such as federal government and the general public still question the purpose of shared governance and suggest institutions restructure to fit the for-profit model corporate mold for more effective change (Kezar, 2001).

Changes in higher education institutions can take many forms. For example, Gumport and Snydman (2002) reported that change could occur in the form of knowledge over an extended period of time in higher education institutions. Their study looked at changes in courses offered in several different disciplines at San José State University over a period of 45 years and reported several different types of changes: knowledge differentiation, knowledge promotion, knowledge evaluation, and knowledge consolidation (2002). Gumport and Snydman's (2002) suggest that, unlike most large corporations and other organizations, higher education institutions take much longer to react to and implement change. Organizations such as higher education institutions may benefit from gradual, small changes over an extended period of time (Rowley & Sherman, 2001). Corporate changes, on the other hand, tend to be revolutionary and involve drastic restructuring (Kezar, 2001). Kezar (2001) writes, "revolutionary change departs significantly from the existing organization and usually occurs suddenly, with drastic changes with the mission, culture, and structure" (p.17).

Rowley and Sherman (2001) write of several ways to make change effective and acceptable to those who would usually resist it in a college or university. The authors suggest using surveys or other feedback methods to measure performance during the change process. Other techniques to make change a smooth transition include implementing a reward system for those willing to assist with the change, working internally with faculty to change institutional culture, and choosing aspects of the institution that are ripe for change as ways to transition into a new project or change that is large in scale (2001). For these methods to work however, it is important to realize that an institutional culture and way of life is in place and resistance in some form or another is often inevitable (2001).

Implementing Change: Learning Gardens at Academic Institutions

One type of project that has become increasingly popular that results in organizational change is the integration of horticulture into educational institutions and organizations, typically in the form of gardens that serve a specific beneficial function. What these gardens consist of and their various exhibits are the choice of the schools and organizations constructing them, but the benefits of gardening in any form have been well documented. Many elementary schools have opted to change their gravel schoolyards to greener spaces with insects and flowers to appeal to students, teachers, and adults alike (Graham, Beall, Lussier, McLaughlin, & Zidenberg-Cherr, 2005). These environments have proved to be beneficial to children by encouraging imaginative play, socialization, and physical activity (2005). Research by Graham et al. (2005) suggests that many California schools have implemented learning garden programs to enhance instruction in subjects such as science, health, and math. Children watch plant life grow, learn to care

for gardens, learn about nutrition, the life cycle, and other functional elements such as shapes and colors. Also, programs that incorporate interdisciplinary learning, such as school gardens, appear to yield higher test scores and fewer classroom disciplinary problems (2005).

Gardening and horticulture itself has become increasingly popular in settings beyond educational institutions. For example, the healthcare community has discovered the benefits of creating an environment that is functional with pleasant characteristics to sooth and reduces stress in patients (Ulrich, 2002). Patients who have access to gardens by either a room with a view or physically working in them appeared to be more content during their hospital stays and recovery from their illnesses faster. Medical research overall has suggested that gardening is associated with stress reducing behavior, social support, and faster recovery rates (2002).

One exemplar of a garden for children is Longwood Gardens, located in Kennet Square, Pennsylvania (Fromme, 2003). The concept for this particular garden was to have the children learning under the guise of aesthetics. All exhibits are integrated with garden elements that have opportunities for incidental teaching. Children would play in a specific exhibit and simultaneously be learning a particular educational element. A team of designers, engineers, and consultants were able to collaborate and create a garden that had educational undertones and slight outlines of stories or themes to facilitate imaginative play (2003).

While there is a vast amount of literature on planning models and procedures in higher education, little exists on the actual planning of developing of gardens and other horticultural elements on college campuses. Also, there is a fair amount of literature on

the existence and benefits of gardens in K-12 institutions. Still, no literature has been found specifically on planning for a learning garden at higher education institutions. There seems to be no documentation as to how a large-scale project that promotes change, such as a learning garden, would be developed through a shared governance system. Such initiatives would likely demonstrate the same benefits in higher education as it has in elementary and secondary education.

Initiative for Learning Garden Development at Rowan University

Rowan University's effort to develop a plan for an interdisciplinary learning garden began in the spring of 2006 (P. Schoen, personal communication, April 30, 2006). The concept for this large-scale project is for it to be educationally functional as well as an aesthetic focal point for the campus. Also, many believe it is an innovative way to beautify the campus. It has been suggested that the completion of the project could promote changes in an academic program's curriculum. The intention for this project is to have exhibits that promote imaginative play but also functional tools for teaching. All exhibits in the garden will have an educational purpose that university faculty and teachers from outside schools can access for lessons (2006).

To plan and prepare for the early stages of this project, a committee structure was put in place to allow for full participation and feedback from all members (P. Schoen, personal communication, September 10, 2006). All committees consist of campus faculty and administration that wish to volunteer their time and efforts for their project and have specific skills and talents to contribute (2006). An umbrella committee, named the Learning Garden Coordination Committee, consists of those monitoring the overall planning for exhibits, fundraising, and publicity for the garden (Figure 2.1). A master

planning committee, which includes members of the umbrella committee, has members who will branch off into smaller subcommittees and be responsible for exhibits, public relations, curriculum development, and community outreach. These committee will address issues together and then reconnect with the Learning Garden Coordination Committee to maintain communication. The concept is that because the same individuals are members of the umbrella, master planning, and subcommittees, a sense of unity can achieved during the course of the project. It is hoped the Rowan University Learning Garden will become an exemplar of interdisciplinary talents and collaboration for future projects (P. Schoen, personal communication, September 10, 2006).

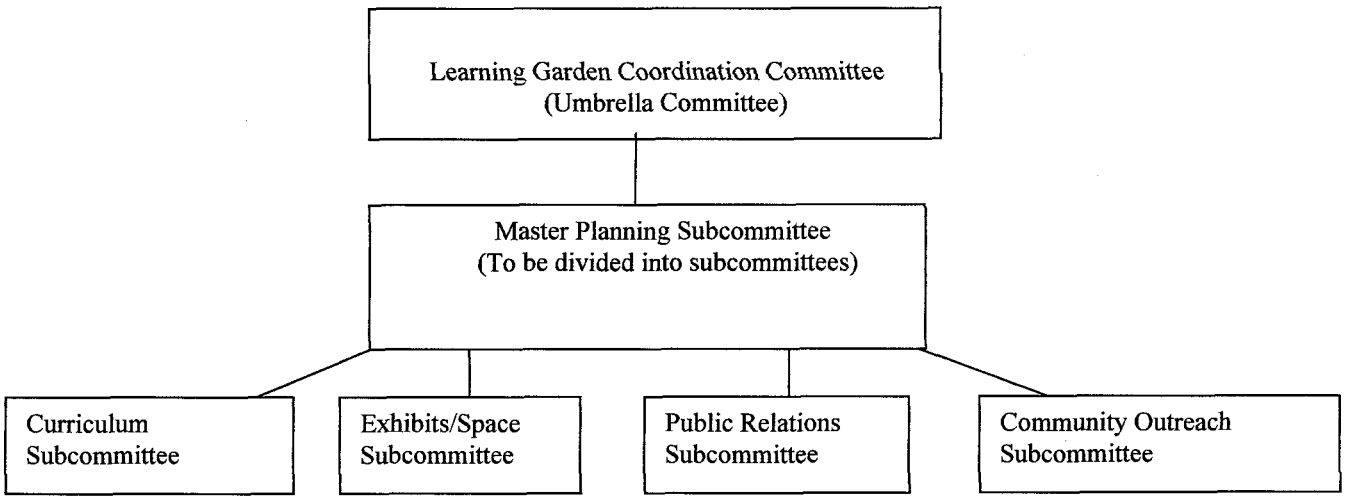

Figure 2.1: Learning Garden Committee Composition

Summary of the Literature Review

Planning in higher education is based on reacting to external forces and utilizing a governance system that allows all members of the institution to participate in the process. Departments in colleges and universities prefer to remain individual entities. The trends in the literature suggest that higher education has attempted to integrate loose

departmental connections and structured management and planning. Decisions can either be made interdepartmentally or collectively as a learning community. One component in higher education that has remained stable is the authority of faculty members on college campuses.

Recent literature proposes using an open communication system to plan more efficient and conveying a sense of project ownership during planning. The standard hierarchical planning style is then reversed to "bottom up" management. Individuals are encouraged to find their talents and passions to complete projects they enjoy. Also, according to the literature, the completion of a project requires continuous renewal and polishing.

Despite operating within a shared governance system, there is often conflict between administration and faculty. While administrator prefer planning that is structured and gives way to additional planning, academic departments view planning as a shift in power toward administration. It is suggested that both parties attempt to compromise and find planning methods that benefit the institution as a whole. Overall, there are often some departments within an institution that will resist change. These departments should be included in the change process if they are affected. Also, it is important to monitor the planning for change and reward those individuals who promote the change.

One type of project that promotes change that has yet to be addressed in the literature in higher education is the implementation of gardening and horticulture in the learning community. Several elementary schools have introduced horticulture onto their campus with highly positive results. Some school districts require gardens as a learning component. Students appear to be highly responsive to gardens socially and

academically. Elements in gardens have been applied to functional learning in the classroom. Gardens and horticultural elements have proven highly effective in the medical field as well. The planning for such projects requires devotion to the project and a highly valued talent that can be applied to creating the garden.

There is an existing gap in the literature between developing a learning garden in a higher education institution. There are no documented studies at this point in time as to how a college or university would plan for a garden. Rowan University is looking to begin early stages of planning for a learning garden, and is developing committees to handle certain elements within the garden. Thus, further research is needed to fill this gap between planning in higher education and the development of large-scale projects such as educational gardens on campuses.

CHAPTER THREE

METHODOLOGY

Context of the Study

The study was conducted at Rowan University in Glassboro, NJ. The university was founded as a normal school in 1923 to prepare teachers for elementary school classrooms (History of Rowan University, 2004). During the 1950s, President Thomas Robinson expanded the campus curriculum and changed the name to Glassboro State College (2004). The college continued to grow and in July 1992, Henry and Betty Rowan donated $100 million to the institution. After establishing a doctoral program in Educational Leadership, the college changed its name to Rowan University in 1997. Dr. Donald J. Farish was named university president in 1998. There are approximately 10,000 students attending Rowan. There are currently 36 majors and 26 master's degree programs. The university is made up of six colleges and a graduate school (Rowan University, 2004).

In 2004, Rowan University began working with Sasaki Associates Incorporated to create a campus master plan that involves large-scale architectural projects and landscape changes to enhance the overall image of the institution (Sasaki, 2006). A Campus Master Plan Committee of university faculty and administrators was brought together to monitor the progress of this project (2006). The goals of the Campus Master Plan include creating coordination and a consistent flow of campus elements and coordinating buildings and facilities with the overall campus landscape (Faison & Orlins, 2004). All projects that

involve altering the campus landscape require approval and close monitoring by the Campus Master Planning Committee (2004).

Population and Sample

To measure the behaviors and planning practices of committee members of this project, the population was faculty members and administrators who participated in all committees for the planning Learning Garden at Rowan University. Key stakeholders involved in the Learning Garden Master Planning Committee were interviewed. Surveys were distributed to members of the committee. The key stakeholders were selected for interviews due to their high level of involvement with the project and were given this name because of personal ideas and contributions to the garden. Six committee members were interviewed and 20 surveys were collected through a combination of email responses and distribution at committee meetings. Surveyed participants were considered a convenience sample, since they were part of a committee the investigator is already associated. Participants who were interviewed are considered a purposeful sample since they hold a particular stake in the project and were selected because of their high involvement with the Learning Garden at Rowan University.

Instrumentation

The instrumentation for this study consisted of a self-designed 36-item survey (Appendix B) that was distributed to all individuals participating in all committees and subcommittees of the Learning Garden project. In addition, key stakeholders were asked to participate in an eight-question self-designed interview (Appendix C) to gain a deeper understanding of the planning and team collaborative practices that developed during the course of this project. All items are based on Austin's (2002) theory of heterarchy in

planning and measured attitudes about collaboration, communication, institutional culture, empowerment, expectations, and time management during the course of planning for the Learning Garden at Rowan University.

The survey consisted of two sections. The first section contains demographic information inquiring about participants' current position at Rowan University, years of experience in their field, years of employment with the institution, gender, and level of education. The second section contains statements to be answered using a 5-point, Likert-style scale that was developed to measure characteristics of heterarchial planning such as pride in being part of a project, effective communication, interdisciplinary collaboration on projects, ownership of a project's goals, project expectations, culture, and the desire to be involved in a project from start to finish. Statements were answered on a scale of 1 (strongly agree) to 5 (strongly disagree). Survey items strictly addressed participants' attitudes during this project only; questions were not asked concerning the nature of past projects or other projects that participants were involved.

The interview questions that were asked of committee members were designed to measure personal feelings on collaboration, open communication and creating a sense of project ownership. Interviewing committee members provided a deeper understanding of committee functions of the project and also revealed characteristics of leadership in a heterarchy: comprehensive teamwork, absence of bureaucratic functions, and a desire to motivate committee members.

Pilot Testing

A pilot test was conducted with the surveys to verify the content validity of the survey items. Members of the Umbrella Committee were emailed the survey with a

request to complete it electronically and reply with any suggestions about the survey's format or wording. Feedback from the pilot surveys was taken into consideration and revisions were made accordingly. Two questions were reworded for clarity and the demographic section was added with the intent to measure any correlations between committee members' characteristics and attitudes about planning. Because Rowan University's Institutional Review Board previously approved this survey, an addendum was created and resubmitted with the suggested revisions (Appendix D).

Data Collection

Following the approval of all revised materials from the Institutional Review Board at Rowan University, chairpersons of the Learning Garden committees were contacted via email and telephone to schedule convenient times to conduct the interviews. The surveys were distributed during the Learning Garden Master Committee meeting. An email about the date and time of this meeting was sent to all committee members. Those members who replied indicating they were unable to attend the meeting due to prior engagements were emailed the survey and consent form along with instructions to complete the form and return it to the investigator as an email attachment.

Before completing the survey, participants were asked to sign a consent form (Appendix A) stating the nature of the study and there was no obligation to participate in the study. Surveys sent to those participants via email had the informed consent in the body of the email. After all consent forms were collected and placed in a sealed envelope, the survey was distributed. Participants needed approximately 15 minutes to complete the survey. Completed surveys were collected and placed in a sealed envelope separate from the consent forms.

Interviews were scheduled via email or phone at the participant's convenience. The estimated time for interviews was 30 minutes. Participants were advised ahead of time that interviews are voluntary and no identifiable information will be released. They were also informed of the study's purpose and its use to fulfill the investigator's master's degree requirements. All participants were asked to give consent for the interview to be recorded and all consented.

Data Analysis

The survey instrument was analyzed using the Statistical Package for the Social Sciences (SPSS). The software analyzed means, frequencies, standard deviations, and any correlations among the committee members who completed the survey. A Pearson correlation was run to detect relationships among certain questions.

Qualitative data collected from the interviews were transcribed and analyzed by content analysis (Sisco, 1981). Specific themes of heterarchial practices were detected using specific code words discovered in the transcribed interviews. Code words were then categorized into themes. The themes were then organized into frequency tables to demonstrate recurrence in specific interview questions.

CHAPTER FOUR

FINDINGS

Study findings are the result of surveys and participant interviews that were collected over a 10-week period to find characteristics of heterarchy in the planning of Rowan University's Learning Garden Project. Survey responses were coded and analyzed using SPSS software, while interviews were transcribed and interpreted using content analysis (Sisco, 1981).

Profile of the Sample

The participants in this study were faculty members, administrators, and students who were members of the Learning Garden Master Plan Subcommittee. Twenty participants were surveyed and six of them, considered key stakeholders, were interviewed because of their initial involvement with the project. The survey participants were considered a convenience sample because survey distribution was based on their availability and willingness to participate. Those who participated in the interviews were a purposeful sample since they are highly involved in the Learning Garden Project and were chosen to find out more about their attitudes and the operation of the committee.

For the purpose of this study, 32 surveys were distributed via email or scheduled committee meetings and 20 were returned, yielding a 62.5% response rate. Participants who were unable to attend the meetings when the survey was distributed were contacted by email and asked to electronically return the completed survey to the investigator. All participants were faculty members, administrators, or students of Rowan University.

Of the 20 surveyed, 40% of the participants were male and 60% were female. Tables 4.1 through 4.3 represent the male and female percentages, position and number of years employed at Rowan University and level of education. Table 4.1 displays the distribution of female and male participants who were administered the survey.

Table 4.1

Gender of Rowan University Learning Garden Master Committee Members

	n=20, M=1.40, SD=.503	
	Frequency	%
Male	8	40
Female	12	60
Total	20	100

Table 4.2 represents the committee members' current position at Rowan University. The majority of the committee members were university administrators at 30%, while faculty made up a total of 50% of the sample. One staff member made up 5% of the sample while the other category was 15%. The individuals who identified themselves as other in the survey were students involved in the committee.

Table 4.2

Position Held at Rowan University

	n=20, M=3.40, SD=1.603	
	Frequency	%
Professor	3	15
Assoc. Professor	3	15
Asst. Professor	4	20
Administration	6	30
Staff	1	5
Other	3	15
Total	20	100

Table 4.3 provides information about the numbers of years of experience in the committee members' current fields. Fifty-five percent of participants reported having

more than 15 years of experience in their current field, while 20% reported having between one and four years experience. One participant did not respond to this question.

Table 4.3

Years of Experience in Current Field

	n=20, M=3.84, SD=1.675	
	Frequency	%
1-4 years	4	20
5-7 years	1	5
10-15 years	3	15
More than 15 years	11	55
No response given	1	5
Total	20	100

Table 4.4 represents the participants' level of education. The largest percentage of committee members, 40%, reported having a doctoral degree, while 25% reported having a master's degree. Three participants selected the "other" category for this question. It is suspected these participants were student committee members.

Table 4.4

Level of Education of Learning Garden Committee Members

	n=20, M=2.58, SD=.961	
	Frequency	%
Bachelor's Degree	3	15
Master's Degree	5	25
Doctoral Degree	8	40
Other	3	15
No response given	1	5
Total	20	100

Analysis of the Data

Research Question 1: What characteristics in the planning process do selected Rowan University Learning Garden Committee members attribute to heterarchial practices?

Some of the main components of heterarchial practices described by Austin (2002) include communication, empowerment, collaboration, established expectations, culture, and time management. The self-designed survey that was distributed to participants contained statements relevant to these elements. Table 4.5 contains the highest rated statements of the heterarchial elements previously mentioned. The item reflective of collaboration, *Even after the project is completed, it will require continuous improvement,* had a mean value of 4.65 (*SD*=.587), with 7.% strongly agreeing, 25% agreeing, 25% disagreeing, and 5% strongly disagreeing. The highest rated item emphasizing communication, *Open communication with committee members results in effective planning,* had a mean of 4.50 (*SD*=. 688), with 60% strongly agreeing, 30% agreeing, and 10% neutral. The highest rated survey item that emphasized culture, *The completion of this project will enhance the institution's culture,* had a mean value of 4.70 (*SD*=.470), with 70% strongly agreeing and 30% agreeing. The statement that reflected empowerment, *I feel a sense of ownership and accountability while working on project,* had a mean value of 4.35 (*SD*=.801), with 45% strongly agreeing, 45% agreeing, 5% neutral, and 5% disagreeing. The statement that reflected expectations, *Expectations of the project were initially explained to the committee members and myself,* had a mean value of 4.35, with 50% strongly agreeing, 40% agreeing, 5% neutral, and 5% disagreeing. The last statement,

The project will be completed within five years, emphasizes time management, and had a mean value of 3.89 (*SD*=.937), with 30% strongly agreeing, 30% agreeing, 30% neutral, and 5% disagreeing.

Table 4.5

Highest Rated Statements of Heterarchial Elements

	Strongly Disagree		Disagree		Neutral		Agree		Strongly Agree	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Collaboration: Even after the project is completed, it will require continuous improvement. n=20, SD=.587 M=4.65	1	5	5	25	0	0	5	25	14	70
Communication: Open communication with committee members results in effective planning. n=20, SD=.688 M=4.50	0	0	0	0	2	10	6	30	12	60
Culture: The completion of this project will enhance the institution's culture. n=20, SD=.470 M=4.70	0	0	0	0	0	0	6	30	14	70
Empowerment: I feel a sense of ownership and accountability while working on project. n=20, SD=.801 M=4.30	0	0	1	5	1	5	9	45	9	45
Expectations: Expectations of the project were initially explained to the committee members and myself. n=20, SD=.813 M=4.35	0	0	1	5	1	5	8	40	10	50
Time Management: The project will be completed within five years. n=19, SD=.937 M=3.89	0	0	1	5	6	30	6	30	6	30

Twenty-one statements out of the 36-item survey were selected that were determined to be the strongest indicators of heterarchial practices. The 21 selected questions were then ranked according to their responses. An average response rate of 4.1 and higher was determined to demonstrate a high level of agreement with that statement, while an average response rate of 3.79 and lower was determined to demonstrate a high level of disagreement with the statement. Table 4.6 displays information about the highest ranked survey items overall. The highest ranked item overall, *The completion of this project will enhance the institution's culture,* had a mean score of 4.70 (*SD*=.470), with 70% strongly agreeing and 30% agreeing. Next, the item *Even after the project is completed, it will require continuous improvement,* had a mean score of 4.65 (*SD*=.587), with 70% strongly agreeing, 25% agreeing, and 5% neutral. The item *The project will service those outside of the institution* had a mean score of 4.55 (*SD*=.510) with 55% strongly agreeing and 45% agreeing. The item *Open communication with committee members results in effective planning* had a mean score of 4.5 (*SD*=.688) with 60% strongly agreeing, 30% agreeing, and 10% neutral. The last statement, *Committee members are dedicated to the successful completion of this project,* had a mean score of 4.5 (*SD*=.470) with 30% strongly agreeing and 70% agreeing.

Table 4.7 provides data about the lowest rated survey items. The first of the lowest rated item, *Committee meetings end with successful conclusions,* had a mean score of 3.79 (*SD*=.976), with 20% strongly agreeing, 45% agreeing, 24% neutral, and 5% strongly disagreeing. The next item, *Committee members and I have maintained frequent communication during the course of the project,* had a mean score of 3.75 (*SD*=1.118), with 30% strongly agreeing, 35% agreeing, 3% neutral, and 20% disagreeing. The item

The committee successfully conducted analyses of strengths, weaknesses, opportunities, and threats of the project had a mean score of 3.53, with 20% strongly agreeing, 30% agreeing, 30% neutral, 10% disagreeing, and 5% strongly disagreeing. The last item, *Clear expectations have been established for all committee members during the project* had a mean score of 3.21, with 5% strongly agreeing, 40% agreeing, 25% neutral, 20% disagreeing, and 5% strongly disagreeing.

Table 4.6

Highest Ranked Survey Items

	Strongly Disagree		Disagree		Neutral		Agree		Strongly Agree	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
The completion of this project will enhance the institution's culture. n=20, SD=.470 M=4.70	0	0	0	0	0	0	6	30	14	70
Even after the project is completed, it will require continuous improvement. n=20, SD=.587 M=4.65	0	0	0	0	1	5	5	25	14	70
The project will service those outside of the institution. n=20, SD=.510 M=4.55	0	0	0	0	0	0	9	45	11	55
Open communication with committee members results in effective planning. n=20, SD=.688 M=4.50	0	0	0	0	2	10	6	30	12	60
Committee members are dedicated to the successful completion of this project. n=20, SD=.470 M=4.50	0	0	0	0	0	0	14	70	6	30

Table 4.7

Lowest Ranked Survey Items

	Strongly Disagree		Disagree		Neutral		Agree		Strongly Agree	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Committee meetings end with successful conclusions. n=19, SD=.976 M=3.79	1	5	0	0	5	25	9	45	4	20
Committee members and I have maintained frequent communication during the course of the project. n=20, SD=1.118 M=3.75	0	0	4	20	3	15	7	35	6	30
The committee successfully conducted analyses of strengths, weaknesses, opportunities, and threats of the project. n=19, SD=1.124 M=3.53	1	5	2	10	6	30	6	30	4	20
Clear expectations have been established for all committee members during the project. n=19, SD=1.032 M=3.21	1	5	4	20	5	25	8	40	1	5

Research Question 2: Is there a significant relationship between the demographic variables of Learning Garden committee members and characteristics of the planning process attributed to heterarchy?

The demographics studied in this survey include position held at Rowan University, years of field experience, length of employment at Rowan University, gender and level of education.

Table 4.8 relates to research question 2 and presents a Pearson product correlation between selected demographics and attitudes about planning for the Rowan University Learning Garden. There is a moderate negative correlation between gender and the item *I*

feel a sense of ownership and accountability while working on this project (r = -.444, p = .050) at a p< .05 level. There is a moderate negative correlation between participants' expectations of the project and the level of education (r = -.491, p= -.033) at a p< .05 level. There is also a moderate negative correlation between the item *Open communication with committee members results in effective planning* and the level of education (r = -.511, p= .025) at a p< .05 level. The results suggest a moderately strong negative correlation between a participant's current position at Rowan University and the item regarding maintaining frequent communication (r = .529, p = .017) at a p< .05 level. There is a moderately strong negative correlation between this particular item and length of employment at Rowan University (r = -.629, p = .005) at a p < .01 level. Furthermore, there was a moderate positive correlation between years of experience in a participant's current field and the item regarding meetings ending with successful conclusions (r = .485, p = .041) at a p< .05 level.

Table 4.8

Selected Demographics and Attitudes about Learning Garden Planning

Items	Demographic	*r* coefficient	*p*-level
I feel a sense of ownership and accountability while working on this project. n=20	Gender	-.444*	.050
Expectations of the project were initially explained to the committee members and myself. n=20	Level of Education	-.491*	.033
Open communication with committee members results in effective planning. n=20	Level of Education	-.511*	.025
Committee members and myself have maintained frequent communication during the course of the project. n=20	Position at Rowan University	-.529*	.017
Committee members and myself have maintained frequent communication during the course of the project. n=20	Length of employment at Rowan University	-.629**	.005
Committee meetings end with successful conclusions.	Years of field experience	.485*	.041

n=20

*Correlation is significant at the 0.05 level (2-tailed).

**Correlation is significant at the 0.01 level (2-tailed).

Research Question 3: Are elements of heterarchy displayed in the operations and functions of the Learning Garden Committee?

In addition to the items that addressed heterarchial elements in project planning, specific items in the survey examined attitudes about committee functions in relation to heterarchial practices. Table 4.9 provides information about the response rate to these questions. A mean value close to 5 (strongly agree) is high. *When assigned specific tasks, I provide reports on progress during meetings* had a mean value of 3.89 (*SD*=1.100), with 35% strongly agreeing, 25% agreeing, 30% neutral, and 5% disagreeing. *I always know what needs to be accomplished before the next meeting* had a mean value of 3.63 (*SD*=1.012), with 25% strongly agreeing, 20% agreeing, 40% neutral, and 10% disagreeing. *I reach out to other committee members about the project multiple times before the next meeting* had a mean value of 2.89 (*SD*=1.286), with 15% strongly agreeing, 10% agreeing, 35% neutral, 20% disagreeing, and 15% strongly disagreeing. *Committee members in the project typically work together rather than being assigned isolated tasks* had a mean value of 3.63 (*SD*=1.012), with 5% strongly agreeing, 25% agreeing, 55% neutral, and 10% disagreeing. Finally, *There has been no single report-to person during the course of this project* had a mean value of 2.74 (*SD*=1.098), with 5% strongly agreeing, 20% agreeing, 25% neutral, 35% disagreeing, and 10% strongly disagreeing.

Table 4.9

Attitudes Pertaining to Committee Functions of the Rowan University Learning Garden

	Strongly Disagree		Disagree		Neutral		Agree		Strongly Agree	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
When assigned a specific tasks, I provide reports on progress during meetings. n=19, SD=1.100 M=.3.89	1	5	0	0	6	30	5	25	7	35
I always know what needs to be accomplished before the next meeting. n=19, SD=1.012 M=3.63	0	0	2	10	8	40	4	20	5	25
I reach out to other committee members about the project multiple times before the next meeting. n=19, SD=1.286 M=2.89	3	15	4	20	7	35	2	10	3	15
Committee members in the project typically work together rather than being assigned isolated tasks. n=19, SD=.733 M=3.26	0	0	2	10	11	55	5	25	1	5
There has been no single report-to person during the course of this project.* n=19, SD=1.098 M=3.00	2	10	7	35	5	25	4	20	1	5

*Negatively worded item.

Research Question 4: How do key stakeholders describe the Learning Garden planning process in relation to characteristics of heterarchial principles of planning?

"How have you conveyed a sense of ownership of this project to your committee members?"

Table 4.10 contains the results of the key stakeholders' views on conveying a sense of ownership to the Rowan University Learning Garden. Seeking input from others, emphasizing the garden is a University-wide interdisciplinary project, seeking out the

talents of the campus community, and updating members on project progress are themes that emerged during the interview of the participants. Seeking input and feedback from others and advocating this interdisciplinary project were two main themes that emerged.

Table 4.10

Content Analysis for "Conveying a Sense of Ownership of This Project To Your Committee Members"

Theme	Frequency	%	Rank Order
Seeking Input From Others	6	30	1
University-wide Interdisciplinary Project	6	30	1
Seeking Out Talent and Project Fit	5	25	2
Providing Updates on Project Progress	3	15	3
Total Frequency	20		

"How have you conveyed openness and effective communication among faculty members and administrators to express their ideas about the Learning Garden?"

Table 4.11 provides information as to how key stakeholders view conveying openness and effective communication to other Learning Garden committee members. The two main themes that emerged were being receptive to ideas and involving multiple disciplines in the project. Two other themes that emerged were emphasizing open communication and the need to establish a project budget.

Table 4.11

Content Analysis for "Conveying Openness and Effective Communication Among Faculty Members and Administration to Express Their Ideas About the Learning Garden"

Theme	Frequency	%	Rank Order
Receptive to Ideas	5	28	1
Involving Multiple Disciplines	5	28	1
Emphasizing Open Communication	4	22	2
Need to Define Budget and Finances	4	22	2
Total Frequency	18		

"How do you think this plan would have been developed differently without the use of structured committees and interdisciplinary talents?"

Table 4.12 provides information about the responses to the project being developed different without the use of committees and interdisciplinary talents on campus. The two most recurring themes from the key stakeholders were that the project would have never occurred and that collaboration from all the disciplines is necessary. However, one theme that did emerge was that without this structure the project would have a clearer focus.

Table 4.12

Content Analysis for "How Plan would have been Developed Differently Without the use of Structured Committees and Interdisciplinary Talents"

Theme	Frequency	%	Rank Order
Never Would Have Occurred	4	31	1
Need Collaboration of All Disciplines	4	31	1
Would have had Clearer Focus	3	23	2
Committee Structure Necessary	2	15	3

Total Frequency	13

"Do you think this project would have been successful or unsuccessful if carried out by a corporation with top-down management?"

Table 4.13 provides the themes that emerged from the views of the project being successful or unsuccessful with a top-down management structure. The strongest theme that emerged was that such a structure would easier access to finances, followed by clearer project goals and timeline. The two most recurring themes for this project being unsuccessful with top-down management were the need for University buy-in and the need to embrace the University's mission.

Table 4.13

Content Analysis for "Carrying out this Project with Top-Down Management"

Group	Theme	Frequency	%	Rank Order
Successful	Financially Feasible	11	48	1
	Clearer Project Goals/Timeline	5	22	2
Unsuccessful	Need University Buy-in	4	17	3
	Need to Embrace Mission	3	13	4
Total Frequency		23		

"How have you been able to successfully tie this project to the University's mission?"

Table 4.14 provides information as to how key stakeholders tie the Learning Garden to the University's mission. The most frequent theme was the mission's roots in educating students, followed by emphasizing interdisciplinary projects, and outreach to communities. The two least emerging themes were tying the project to the University's broad mission statement, and the mission not yet being tied to the Learning Garden.

Table 4.14

Content Analysis for "Successfully Tying this Project to the University's Mission"

Theme	Frequency	%	Rank Order
Roots in Educating Students	7	33	1
Emphasizing Interdisciplinary Projects	5	24	2
Outreach to Local Communities	5	24	2
Broad Mission Statement	2	9	3
Mission Not Yet Tied to Project	2	9	3
Total Frequency	21		

"What opportunities do you see exist for the committee of this project?"

Table 4.15 provides information about the types of opportunities that key stakeholders envisioned for the Learning Garden. The most frequent theme was opportunity for campus involvement, followed by creative innovations. The least frequent themes were sustainability and the project needing further development.

Table 4.15

Content Analysis for "The Opportunities You See Exist for This Project"

Theme	Frequency	%	Rank Order
Opportunity for Campus Involvement	6	40	1
Creative Innovations	5	33	2
Sustainability	2	13	3

Project Needs to be Developed More	2	13	3
Total Frequency	15		

"In what ways, if any, has this project allowed for your personal and professional advancement?"

Table 4.16 provides information about how key stakeholders viewed the Learning Garden in terms of their personal and professional development. In regards to personal development, satisfaction with this project was the most frequent theme, followed by environmental contribution. Professionally, key stakeholders viewed the project as an opportunity to contribute to the university and a form of social networking.

Table 4.16

Content Analysis for "Personal and Professional Development"

Group	Theme	Frequency	%	Rank Order
Personal	Satisfaction with Project	7	32	1
	Environmental Contribution	3	14	2
Professional	Contributing to University	6	27	1
	Social Networking	6	27	1
Total Frequency		22		

"Based on your past experience, what attributes to you believe contributed to successful and productive committees on campus?"

Table 4.17 provides the attributes of successful and productive committees at Rowan University. The strongest theme that emerged from the interviews was well-defined direction. A strong chairperson, active participants, and qualified committee members were other themes revealed by the key stakeholders.

Table 4.17

Content Analysis for "Attributes of Successful and Productive Committees on Campus"

Theme	Frequency	%	Rank Order
Well-defined Direction	4	40	1
Strong Chair	3	30	2
Active Participants	2	20	3
Qualified Committee Members	1	10	4
Total Frequency	10		

"Based on your past experiences, what do you believe to be some of the obstacles committees have faced while undertaking projects?"

Table 4.18 provides information about key stakeholders' past experiences of the obstacles committees have faced while undertaking projects. The most frequent theme to emerge from the interviews was an unclear charge of the committees. This theme was followed by not understanding goals, not assuming responsibility, and lack of effective planning.

Table 4.18

Content Analysis for "Obstacles Committees have Faced While Undertaking Projects"

Theme	Frequency	%	Rank Order
Unclear Charge	6	40	1
Not Understanding Goals	4	27	2
Not Assuming Responsibility	3	20	3
Lack of Effective Planning	2	13	4
Total Frequency	15		

CHAPTER FIVE

SUMMARY, DISCUSSION, CONCLUSIONS, AND RECOMMENDATIONS

Summary of the Study

The study investigated the evidence of heterarchial practices of committee members planning for an educational garden at Rowan University. The participants in this study were all committee members who were involved with the planning of the Rowan University Learning Garden. Of the 32 surveys distributed, 20 were returned, yielding a 62.5% response rate. In addition, six committee members considered key stakeholders because of their high level of involvement in the planning of the project were interviewed to gain an understanding of any heterarchial elements that manifested during the planning of the Learning Garden. SPSS software was used to calculate descriptive statistics, such as frequencies, percentages, means, and standard deviations. Statistically significant findings were calculated using bivariate Pearson correlations. All recorded interviews were transcribed and analyzed using content analysis to look for recurring themes (Sisco, 1981).

Purpose of the Study

The purpose of this study was to better understand attitudes pertaining to the planning of an educational garden at Rowan University in relation to practices of heterarchy. This study attempted to fill the gap between planning processes in higher education and development of educational gardens in institutions. Attempting to further examine evidence of heterarchy during the planning of this particular project, this study

closely examined elements such as collaboration, communication, culture, empowerment, expectations, and time management among Learning Garden committee members. Looking at these factors provided insights into the current attitudes about planning for large-scale projects and how the Learning Garden committee operates.

Methodology

The researcher surveyed selected Learning Garden committee members at Rowan University. A total of 20 committee members participated in the surveyed while six committee members who were considered key stakeholders due to their high involvement level were interviewed. An anonymous 36-item self-designed survey was distributed to committee members through a combination of email and distribution at meetings of the Learning Garden. Selected key stakeholder members were contacted via phone or email to agree to be interviewed. Before the interview, the researcher explained the purpose of the study followed by the eight-question interview.

Data Analysis

Survey data were analyzed using the Statistical Package for the Social Sciences (SPSS). SPSS descriptive statistics provided means, standard deviations, frequencies, percentages for the demographics and attitudes of Learning Garden Committee members at Rowan University. A Pearson bivariate correlation was calculated using SPSS to determine any significant relationships between selected demographics and specific survey items. The qualitative data compiled from the interview questions were analyzed using content analysis to look for common themes (Sisco, 1981). The corresponding frequencies and percentages of the determined themes were calculated and presented in table format within the study.

Discussion of the Findings

Research Question 1: What characteristics in the planning process do selected Rowan University Learning Garden Committee members attribute to heterarchial practices?

The findings of the study suggest that, of the elements of heterarchy examined in the survey, members of the Learning Garden committee value culture and collaboration the most, empowerment and time management the least. Of the highest ranked survey items, participants had the strongest levels of agreement with items pertaining to culture and completion of the project to service the community. Participants had the lowest levels of agreement with established expectations and meetings leading to successful conclusions. These findings suggest that while committee members of the Learning Garden project at Rowan University support projects that utilize interdisciplinary talent and are relevant to the institutions culture, these projects may lack clear communication and direction to completion. In relation to Austin (2002), the project may be developed at the personal and departmental levels, but has not reached the institutional level because of the lack of communication. While committee members see the project as beneficial to surrounding communities and the institution's culture, unclear expectations may be impacting the level of empowerment. Also, the findings suggest that committee members may be acting as separate entities and are unable to reach compromise to move the project to the next level (Kezar, 2006).

Such findings are also consistent with research describing higher education institutions are loosely coupled systems (Weick, 1976). Departments and divisions preserve a single strong identity while maintaining weaker relationships with other

departmental units. This adaptive behavior can result in lower levels of communication between disciplines and lack of response to change (1976). In addition, Swenk (1999) argues that looking for inconsistencies in higher education institutions is key to better managing the fluid structure of shared governance. Administrators who take comprehensive planning approaches with faculty often face stark cultural contrasts that impact expediency in the planning process (1999). This suggests that the flexibility Learning Garden committee members have been provided for this project may actually be delaying the planning process due to cultural differences between faculty and administration.

Research Question 2: Is there a significant relationship between the demographic variables of Learning Garden committee members and characteristics of the planning process attributed to heterarchy?

There were moderately negative correlations between females and feeling ownership during the project. These findings suggest that being female is negatively associated with project ownership. However, the results of this question could be attributed to a large percentage (60%) of the surveyed population was female. There was a moderately negative correlation between open communication resulting in effective planning and the level of education. This suggests that individuals with a doctoral degree are likely not to associate open communication with planning. Also, there was a strong negative correlation between maintaining frequent communication during project planning and length of employment and position held. This correlation suggests that the longer an individual is employed at Rowan University, he or she is less likely to communicate with committee members during planning. The correlation also suggests

that administrators are more likely than others in the campus community to advocate frequent communication during project management. As mentioned in the previous research question, Swenk (1999) argues that administrators need to be cautious when balancing faculty and administrative interest due to cultural differences. The findings of this study suggest that administrators view themselves as communicators, a concept that may not be reflective of faculty attitudes about communication. The findings also indicate that administrators are more likely than other members of higher education institutions to practice elements of heterarchy.

The findings support previous research by Birnbaum (1991) who argued that adherence to a culture of hierarchy is consistent within an institution that is marked by a political frame using coercive power. Highly coveted resources are distributed to higher-level management. In the case of the Learning Garden, longer-term employees of the institution who have doctoral degrees are less likely to value open and frequent communication when involved with committees (1991).

Research Question 3: Are elements of heterarchy displayed in the operations and functions of the Learning Garden Committee?

The results of the survey also suggests that participants agree that in regards to committee operations, they accomplish assigned tasks before the next committee meeting, and agree that there is one particular individual they have reported to during the course of planning for the Learning Garden. Participants also felt neutral about collaborating with other committee members on the project rather than working alone, suggesting committee members have not collaborated extensively for the project during the time the survey was administered.

Richard and Gardner (1983) argue that planning in higher education falls on a continuum of disjointed, adaptive, strategic, and comprehensive planning, with disjointed being the least structured and comprehensive being the most sophisticated. The findings in this study suggest that planning for the Learning Garden could be considered disjointed and adaptive, since committee members prefer to handle tasks individually and the planning thus far has lacked clear goals and direction. According to Birnbaum (1991), such planning structures are preferred, since higher education institutions are often shaped and reshaped by changing outside forces.

Although the Learning Garden project at Rowan University would likely benefit from heterarchial functions because of its interdisciplinary nature, the findings of this study suggest that the committee does not operate like a heterarchy at this time. Austin (2002) explains that project leaders should remove themselves from tasks and assign them to a designated team leader who embraces the project's vision. The team leader is considered a motivator who advocates collaboration and empowerment to create a high-performance team (2002). Learning Garden committee members indicated they have a single report-to person for the project and have neutral feelings about collaboration among committee members, suggesting that committees in this project do not operate with a heterarchial structure and lack inspirational leadership. Inspirational leaders are able to establish clear directions and visions for their followers while assuring steady development of projects.

Research Question 4: How do key stakeholders describe the Learning Garden planning process in relation to characteristics of heterarchial principles of planning?

The six key stakeholders interviewed about the committees working expressed frequent themes about receiving feedback and input, open communication, community service, and interdisciplinary collaboration. Also, a large percentage of those recurring themes (60%) included conveying a sense of ownership by seeking input from others and emphasizing the project as being an interdisciplinary effort. However, some of the participants interviewed expressed financial concerns, unclear direction, and lack of project development. The project needing further development and a clearer project timeline were prevalent themes that emerged. These findings indicate that perhaps while some notion of heterarchy is in place, the Learning Garden may still be a loosely organized project with a direction that has yet to be developed.

Like the survey data, findings in the interviews continue to suggest that the Learning Garden is reflective of the slower and murkier decision-making processes characteristic of loosely coupled systems (Weick, 1976). The findings suggest that there is a lack of heterarchial practices in regards to assigning roles, setting clear expectations, and providing an established timeline for project completion. Austin (2002) argued that teams are developed with a sense of purpose, identity, and responsibility. Because the interview data indicates there are unclear direction and no timeline for project completion, the Learning Garden committee has yet to have a set purpose and understanding of the scope of the project.

Also, the findings from the interviews suggest there are financial concerns, indicating the existence of political undertones that typically determine the allocation of resources in institutions that have bureaucratic functions (Birnbaum, 1991). While campus wide participation in a project can give way to acceptance of change on a larger

scale, external forces such as state funding and public perception may influence how institutions pursue projects that require financial assistance (1991).

Conclusions

The findings of this study suggest that in relation to heterarchy, Rowan University Learning Garden committee members value collaborating with others to successfully complete a project that will enhance the institution's culture. However, the findings also indicate that because the project has yet to have a clarified purpose, direction, and timeline, committee members have not been empowered to carry out tasks. The findings indicate that lack of information about the project's budget, vision, and expectations has not allowed elements of heterarchy to emerge. Also, the findings reveal different views of communication between faculty and administration that are involved in the project; caution is warranted to conclude this finding due to small sample size of Learning Garden committee members.

The findings indicate attempting to convey a sense of ownership for the Learning Garden has been accomplished through seeking input from others and emphasizing the interdisciplinary nature of the project. However, such efforts may not have impact on how committee members communicate or accept responsibility for a project. The findings suggest that the project has not been successfully tied to the institution's overall mission, and that financial concerns for the project are influencing opportunities to practice heterarchy within the Learning Garden committee.

The findings indicate that committee members view the Learning Garden as a worthwhile project to pursue. The findings further reveal that committee members feel the Learning Garden will have a positive impact on the future of the institution and will

be enriching to Rowan University's culture. The findings also suggest that developing educational gardening facilities at higher education institutions would be a productive project that would attract individuals who wish to partake in interdisciplinary collaboration.

Finally, the findings reveal that because of cultural differences between academic departments and administrative units at higher education institutions, the prospect of practicing heterarchy for planning large-scale projects can be determined as being low. The findings suggest that the weak connections and adaptive behavior that characterize loosely coupled systems are also presently displayed in the functioning of the Learning Garden Committee where planning is interdisciplinary but communication and establishing direction can be at times difficult and nebulous. In addition, the findings indicate that large-scale projects are budget-driven, making higher education institutions vulnerable to external forces and political power.

Recommendations for Further Practice and Research

Based upon the findings and conclusions of the researcher, the following suggestions are presented:

1. Project management tools, such as planning software, could be utilized for the Learning Garden to track progress and timelines.
2. Appointing a project manager to clarify the purpose, responsibilities, and timeline of the Learning Garden would likely help committee members embrace the projects vision.
3. Perhaps periodically celebrate accomplishments during planning for the Learning Garden while seeking feedback after each planning phase.

4. Emphasize the symbolism of the project and its importance to the institution to ensure effective and timely planning.
5. Performing a longitudinal study with this type of planning perhaps over a period of five to ten years.
6. Continue to conduct research to discover heterarchial practices in other committees at four-year institutions and how this influences planning in large-scale projects.
7. Research the effects of an educational gardening facility on university campus by examining any changes in curriculum development or student involvement.
8. The same survey could be distributed to individuals at another institution, such as a community college or P-12 school, who are planning for projects. The results could then be compared with those in this study to look for an significant differences.
9. The committee for this project could be surveyed again after the project is completed to look for continuing evidence of heterarchy.
10. A similar study could be carried out at another institution planning for a educational garden.

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APPENDIX A

Survey Informed Consent Form

Informed Consent Form: Survey about Rowan University's Learning Garden Initiative

You are being asked to participate in a research project conducted by Sheri K. Barnes through Rowan University as part of a requirement for a thesis project in partial fulfillment for a master's degree in Higher Education Administration. The University requests that you give your signed agreement to participate in this project.

The purpose of this project is to learn more about committee members' attitudes about planning for early stages of the Learning Garden at Rowan University. This survey should take approximately 10 minutes and will be collected upon completion.

This consent form will be collected as soon as it is signed. All answers and data collected from the survey will be anonymous and coded for further confidentiality using statistical software.

Participation is voluntary and refusal to participate will involve no penalty or loss of benefits to which you are otherwise entitled. You may discontinue participation at any time without penalty or loss of benefits to which you are otherwise entitled.

If you should have any questions about this study at any point in time, please contact myself at sheribarnes@comcast.net, or my thesis advisor, Dr. Burton Sisco, at 856-256-4500 ext. 3717, sisco@rowan.edu for additional information.

I agree to take part in the Sheri K. Barnes' research study by completing the survey mentioned above.

_____ _____

Signature Date

APPENDIX B

Survey Instrument

Rowan University Learning Garden Committee Members and the Planning Process

This survey is being administered as part of a thesis project in partial fulfillment of graduate program requirements at Rowan University. While your participation is voluntary and you are not required to answer any of the questions herein, your cooperation and participation are important to the success of this project and are greatly appreciated. If you choose to participate, please understand that all responses are strictly confidential and no personally identifiable information is being requested. Moreover, whether you agree to participate or not, your decision will have no effect on any status you currently hold at Rowan University.

The following survey is designed to measure attitudes and behaviors toward the Learning Garden Committees and planning processes.

Section I.

Please complete the following information by checking the appropriate response.

1. What is your position at Rowan University?

☐ Professor ☐ Assoc. Professor ☐ Asst. Professor

☐ Administration ☐ Staff ☐ Other___ ___
(Please indicate)

2. How many years of experience do you have in your current field?

☐ 1-4 years ☐ 5-7 years ☐ 8-10 years ☐ 10-15 years ☐ more than 15 years

3. How long have you been employed at Rowan University?

☐ 1-4 years ☐ 5-7 years ☐ 8-10 years ☐ 10-15 years ☐ more than 15 years

4. What is your gender?

☐ Female ☐ Male

5. What is your level of education?

☐ Bachelor's degree ☐ Master's Degree ☐ Doctoral Degree ☐ Other___ ___
(Please indicate)

Section II.

Please complete the following questions by checking your response to each on a scale of 1 through 5, 1 indicating *strongly disagree* and 5 indicating *strongly agree*.

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1. I feel a sense of ownership and accountability while working on the project.	☐ 5	☐ 4	☐ 3	☐ 2	☐ 1
2. Committee members and myself have maintained frequent communication during the course of the project.	☐ 5	☐ 4	☐ 3	☐ 2	☐ 1
3. The project is moving along according to schedule.	☐ 5	☐ 4	☐ 3	☐ 2	☐ 1
4. Open communication with committee members results in effective planning.	☐ 5	☐ 4	☐ 3	☐ 2	☐ 1
5. I see clear connections between the project and the University's mission.	☐ 5	☐ 4	☐ 3	☐ 2	☐ 1
6. When a committee assigns me a specific task, I provide reports on progress during meetings.	☐ 5	☐ 4	☐ 3	☐ 2	☐ 1
7. Committees in the project typically work together rather than assigning members isolated tasks.	☐ 5	☐ 4	☐ 3	☐ 2	☐ 1

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
8. Expectations of the project were initially explained to the committee members and myself.	☐ 5	☐ 4	☐ 3	☐ 2	☐ 1
9. The committee successfully conducted analyses of strengths, weaknesses, opportunities, and threats of the project.	☐ 5	☐ 4	☐ 3	☐ 2	☐ 1
10. Committee meetings end with successful conclusions.	☐ 5	☐ 4	☐ 3	☐ 2	☐ 1
11. I always know what needs to be accomplished before the next committee meeting.	☐ 5	☐ 4	☐ 3	☐ 2	☐ 1
12. I view large-scale projects as a change to the entire University.	☐ 5	☐ 4	☐ 3	☐ 2	☐ 1
13. I am fully aware of the mission of the project.	☐ 5	☐ 4	☐ 3	☐ 2	☐ 1
14. The basic goals of the project can be understood by someone outside of Rowan University.	☐ 5	☐ 4	☐ 3	☐ 2	☐ 1
15. The project will be completed within 5 years.	☐ 5	☐ 4	☐ 3	☐ 2	☐ 1
16. I measure the success of projects by how long it takes to complete from start to finish.	☐ 5	☐ 4	☐ 3	☐ 2	☐ 1
17. All committee members' roles in the project are assigned according to talents and passions.	☐ 5	☐ 4	☐ 3	☐ 2	☐ 1
18. The project will serve as an exemplar for other institutions that wish to pursue something similar.	☐ 5	☐ 4	☐ 3	☐ 2	☐ 1
19. Change and learning are at the center of planning for the project.	☐ 5	☐ 4	☐ 3	☐ 2	☐ 1
20. Clear expectations have been established for all committee members during the project.	☐ 5	☐ 4	☐ 3	☐ 2	☐ 1
21. The project will contribute to my personal development.	☐ 5	☐ 4	☐ 3	☐ 2	☐ 1
22. Committee members are dedicated to successful completion of the project.	☐ 5	☐ 4	☐ 3	☐ 2	☐ 1
23. Expectations of the project are filtered back to the committee chairperson.	☐ 5	☐ 4	☐ 3	☐ 2	☐ 1
24. Even after the project is completed, it will require continuous improvement.	☐ 5	☐ 4	☐ 3	☐ 2	☐ 1
25. The project will service those outside of the institution.	☐ 5	☐ 4	☐ 3	☐ 2	☐ 1
26. The completion of the project will enhance the institution's culture.	☐ 5	☐ 4	☐ 3	☐ 2	☐ 1

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
27. I believe projects involving committees encourage personnel at all institutional levels to enhance personal talents and skills.	☐ 5	☐ 4	☐ 3	☐ 2	☐ 1
28. There is a sense of empowerment of the project among those in the committee.	☐ 5	☐ 4	☐ 3	☐ 2	☐ 1
29. I have told people outside of the institution about the project.	☐ 5	☐ 4	☐ 3	☐ 2	☐ 1
30. There has been no single report-to person during the course of the project.	☐ 5	☐ 4	☐ 3	☐ 2	☐ 1
31. I reach out to other committee members for the project multiple times before the next meeting.	☐ 5	☐ 4	☐ 3	☐ 2	☐ 1

Thank you for completing this survey. Please return the survey and other completed materials as directed.

APPENDIX C

Interview Instrument

Rowan University Learning Garden Committee Members and the Planning Process

This interview is being conducted as part of a thesis project in partial fulfillment of graduate program requirements at Rowan University. While your participation is voluntary and you are not required to answer any of the questions herein, your cooperation and participation are important to the success of this project and are greatly appreciated. If you choose to participate, please understand that all responses are strictly confidential and no personally identifiable information is being requested. Moreover, whether you agree to participate or not, your decision will have no effect on any status you currently hold at Rowan University.

The following interview is designed to measure attitudes and behaviors toward the Learning Garden Committees and Planning Processes.

Interview Questions for Learning Garden Committee Chairpersons

1. How have you conveyed a sense of ownership of this project to your committee members?
2. How have you conveyed openness and effective communication among faculty members and administrators to express their ideas about the Learning Garden?
3. How do you think this plan would have been developed different without the use of structured committees and interdisciplinary talents? Do you think this project would have been successful or unsuccessful if carried out by a corporation with top-down management?
4. How have you been able to successfully tie this project to the University's mission?
5. What opportunities do you see exist for the committees of this project?
6. In what ways, if any, has this project allowed for your personal and professional development?
7. Based on your past experiences, what attributes do you believe contributed to successful and productive committees on campus?
8. Based on your past experiences, what do you believe to be some of the obstacles committees have faced while undertaking projects?

APPENDIX D

Approved IRB Application

Rowan University
INSTITUTIONAL REVIEW BOARD
HUMAN RESEARCH REVIEW APPLICATION

INSTRUCTIONS: Check all appropriate boxes, answer all questions completely, include attachments, and obtain appropriate signatures. Submit an **original and two copies** of the completed application to the Office of the Associate Provost.
NOTE: **Applications must be typed.**
Be sure to make a copy for your files.

FOR IRB USE ONLY:
Protocol Number: IRB-2007-087
Received:_____ Reviewed:_____
Exemption: ___Yes ___No
Category(ies):_____
Approved _____(date) 12/13/06

Step 1: **Is the proposed research subject to IRB review?**

All research involving human participants conducted by Rowan University faculty and staff is subject to IRB review. Some, but not all, student-conducted studies that involve human participants are considered research and are subject to IRB review. Check the accompanying instructions for more information. Then check with your class instructor for guidance as to whether you must submit your research protocol for IRB review. If you determine that your research meets the above criteria and is not subject to IRB review, **STOP**. You do not need to apply. If you or your instructor have any doubts, apply for an IRB review.

Step 2: **If you have determined that the proposed research is subject to IRB review, complete the identifying information below.**

Project Title: Planning Styles and Collaboration of Large Scales Projects: Learning Garden Planning and Development at Rowan University

Researcher: ____Sheri K. Barnes_____

Department:_Educational Leadership_____ Location _Education Hall _____

Mailing Address: ___226 Ruth Ave_____ (Street)
___Maple Shade, NJ 08052_____ (Town/State/Zip)

E-Mail: _sheribarnes@comcast.net_ Telephone: 856-220-5550_____

Co-Investigator/s:

Faculty Sponsor (if student)* _Dr. Burton Sisco_____
Department Educational Leadership_____ Location: ___Education Hall_____
E-Mail: _sisco@rowan.edu_____ Telephone: _____856-256-4500__ext 3717_____

APPENDIX E

Rules and Procedures for Logical Analysis of Written Data

APPENDIX E: RULES AND PROCEDURES FOR LOGICAL ANALYSIS OF WRITTEN DATA

The following decisions were made regarding what was to be the unit of data analysis (Sisco, 1981):

1. A phrase or clause will be the basic unit of analysis.
2. Verbiage not considered essential to the phrase or clause will be edited out- e.g., articles of speech, possessives, some adjectives, elaborative examples.
3. Where there is a violation of convention syntax in the data, it will be corrected.
4. Where there are compound thoughts in a pharse or clause, each unit of thought will be represented separately (unless one was an elaboration of the other).
5. Where information seems important to add to the statement in order to clarify it in a context, this information will be added to the unit by using parenthesis.

The following decisions were made regarding the procedures for categorization of content units:

1. After several units are listed on a sheet of paper, they will be scanned in order to determine differences and similarities.
2. From this tentative analysis, logical categories will be derived from the units.
3. When additional units of data suggest further categories, they will be added to the classification scheme.
4. After all the units from a particular question responses are thus classified, the categories are further reduced to broad clusters (collapsing of categories).
5. Frequencies of units in each cluster category are determined and further analysis step are undertaken, depending on the nature of the data-i.e., ranking

of categories with verbatim quotes which represent the range of ideas or opinions. (p. 177).

APPENDIX F

Knowledge Vee Heuristic

Sheri K. Barnes
Thesis Vee Hueristic

Focus Questions

1. What is the procedure and process like for planning the construction of a Learning Garden on a university level?
2. What are the attitudes of faculty and administrators about the planning and collaboration efforts to successfully create a Learning Garden on a college campus?
3. Do Rowan University faculty members involved in planning for the Learning Garden exhibit characteristics of collaborative and heterarchial planning styles?

Conceptual (Thinking)

Theory:

1. Austin: Heterarchies
2. Birbaum: Collegial Systems

Principles:

1. Heterarchy allows organizations to operate in a flattened, networked fashion with open communication.
2. Successful heterarchies require team members to be passionate and contribute their talents to a project.
3. Collegial systems allow all members to participate in plans, create a sense of commitment and unity, and emphasize collaboration.

Concepts:

1. Ownership of projects
2. Open communication
3. Interdisciplinary projects
4. Collegial organizations
5. Campus involvement
6. Project persistence

Events:

1. Reviewing literature on planning procedures in higher education and the benefits of Learning Gardens.
2. Continuous activity in the planning process (i.e., committee participation).
3. Interview/survey faculty and administrators about their attitudes and expectations of planning the garden.
4. Analyze data to discover correlations and other relationships about attitudes and views on planning.

Methodological (Doing)

Claims

1. Interdisciplinary activities will give way to committee formation and collaboration.
2. An emerging heterarchy will be formed within the Learning Garden committees.
3. Learning Garden construction and creation requires support and participation from all university disciplines and community members.
4. All committee members are supportive of the project and all feel that they own a small piece of it.

Transformations:

1. Attitudes about planning revealed through interviews and surveys using SPSS.
2. Collaboration and comprehensive planning is the most effective type of planning for Learning Garden construction.

Records:

1. Feedback from surveys and interviews about planning the Learning Garden.
2. Archived documents, schedules, and correspondence from those involved in the planning process.