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A CASE STUDY ON THE INFLUENCE OF ORGANIZATIONAL STRUCTURES AND POLICIES ON FACULTY IMPLEMENTATION OF LEARNER-CENTERED TEACHING

A Dissertation Presented

by

KEVIN SCOTT PISKADLO

Submitted to the Office of Graduate Studies,
University of Massachusetts Boston,
in partial fulfillment of the requirement for the degree of

DOCTOR OF PHILOSOPHY

May 2016

Higher Education Administration Program

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ABSTRACT

A CASE STUDY ON THE INFLUENCE OF ORGANIZATIONAL STRUCTURES AND POLICIES ON FACULTY IMPLEMENTATION OF LEARNER-CENTERED TEACHING

May 2016

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In their seminal 1995 article, Barr and Tagg encouraged higher education to think differently about undergraduate education and suggested that a new paradigm be adopted that focused less on what is taught and more on what is learned. Dubbed the learner-centered paradigm, this reframing of education challenges long standing practices and removes the instructor as the literal and figurative center of the classroom, requiring that students take a more active role in their education and in the creation of knowledge.

Despite the fact that empirical research consistently finds that practices congruent with the learner-centered paradigm greatly benefits students, full-scale adoption of the paradigm has been slow across the higher education landscape. The SCALE-UP program

that emerged out of North Carolina State University, however, has provided institutions with a model for how learner-centered teaching techniques can be leveraged in large enrollment courses and hundreds of institutions across the globe have successfully adopted this program.

In this multiple case study of two large, public institutions that have adopted SCALE-UP, this study provides insight into how faculty implementation of learner-centered teaching and learning practices is influenced by organizational structures and policies and how they can encourage and support faculty transition to a learner-centered practice. Findings suggest that these included policies and structures that involve: 1) institutional leadership; 2) finance and academic departmental influence and configurations; 3) faculty training and development programs; 4) physical facilities; and 5) incentives to learn, develop, and maintain new practices.

Extrapolated from the findings that emerged through this research are a number of implications and recommendations: Support and advocacy from institutional leadership is critical for the initiation and sustainment of paradigm change, academic departments can create learner-centered cultures that encourage and support learner-centered teaching practices, provide meaningful opportunities for faculty to become exposed to the learner-centered paradigm and create ongoing training and professional development to support related teaching and learning practices, invest in the creation of physical active-learning structures, create policies and structures that provide meaningful incentives for faculty to adopt learner-centered teaching practices, and strategically connect learner-centered practices and initiatives taking place across campus.

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This dissertation is the culmination of many years of study and would not have been possible without the constant support and encouragement of family, friends, colleagues, the faculty at the University of Massachusetts Boston, and my classmates in Cohort 2009. I am forever grateful to everyone who has taken this journey with me.

I am deeply thankful for my dissertation committee, Dr. John Saltmarsh and Dr. Dwight Giles of UMass Boston, and Dr. Mary Dean Sorcinelli of Mount Holyoke College, for their feedback and guidance throughout the process. I was lucky to have been assigned John as my advisor at the start of the program and it was his class that uncovered a passion for the learner-centered paradigm and inspired me to explore this topic through research. He has been a wonderful chair of my committee and his gentle nature was critical when I struggled from time to time to stay engaged with my studies and research. Dwight introduced me to case study research and I had the pleasure of having him in several classes and seminars throughout the program. His feedback throughout all stages of the process helped make this a better dissertation and his insistence that this was a valuable study for the field kept me motivated and inspired.

Going to school part-time and embracing the scholar-practitioner identity is only possible if you have supportive colleagues and supervisors. I was lucky to have this at school with Cohort 2009 and at work at both Bentley University and Stonehill College. Thank you to all my classmates, work friends, and colleagues, especially my supervisors and mentors Jane Ellis, Craig Almeida, and Pauline Dobrowski. They supported me

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The faculty and staff who participated in this study are inspirational scholars and educators and I am extremely appreciative of their willingness to welcome me to their campuses and share their thoughts and experiences. I left each interview not only knowing more about the topic, but inspired in my own teaching as well.

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CHAPTER 1

BACKGROUND

Over the course of the United States' history, the role that higher education plays in American culture has evolved significantly as society has simultaneously grown and changed. A nation that once depended on its land and later its factories to remain competitive has evolved dramatically in an ever expanding global, knowledge-based society (Duderstadt, 1999, 2009; Friedman, 2005). As a result of this shift, researchers continue to affirm the increasing value of a college education and the growing importance that formal education and lifelong learning has in this new society (Bagnato, 2005; Honawar, 2005; Thomas & Zhang, 2005; Kelly & Prescott, 2007).

As the importance of higher education continues to rise, there has been increasing scrutiny regarding the actual quality of undergraduate education. First emerging in the 1980s following the economic decline in the United States at the hands of new international competitors, a proliferation of books and articles have offered a stinging indictment of higher education (Bloom, 1987; Shaw, 1989; Hersh & Merrow, 2005; Bok, 2006, 2013; Arum & Roksa, 2011). Each questioned the outcomes of an education system that they found increasingly included poor teaching, indifferent faculty members, disinterested students, graduates who could not read, and precipitous drops in standardized test scores despite the fact that grade point averages were increasing

(Bloom, 1987; Chickering & Gamson, 1987; Shaw, 1989; Cross, 1976). Boyer's (1987) detailed research of undergraduate education in the 1980s revealed a startling number of serious issues and disconnects and concluded that many universities were more competent in handing out credentials than in actually providing students with a quality education.

Despite the fact that this criticism is now over three decades old, critique of higher education continues. More recently, scholars such as Arum and Roksa (2011) and Bok (2006, 2013) have offered their own critique on the state of undergraduate education, alleging that contemporary higher education is underachieving. With many educators agreeing with his dire conclusions (Hutchings, Huber, & Ciccone, 2011), Bok (2006) posits that the quality of undergraduate education will only improve if colleges and universities become more effective at what Senge (1990) refers to as learning organizations.

In light of these calls for a renewed focus on learning, a greater amount of attention is being given to the process of how students actually learn (Hutchings et al., 2011) and, as Cross (1999) notes, we are more knowledgeable about how students learn than at any other time in the history of higher education. Bransford (2000) and Innes (2004), for example, have found that there has been tremendous growth in the collective knowledge base regarding learning as understanding of this important process has evolved from mere anecdote and intuition to actual science. Emerging research in the cognitive sciences has provided for a more complex and richer understanding of how students navigate important learning processes including the early foundations of

problem solving, reasoning, and memory. Also becoming better understood is how a student's culture, experiences, and community influence learning (Bransford, 2000; Innes, 2004).

As a result of this growing demand for higher education and renewed focus on learning, many in the academy have advocated for the adoption of a learner-centered[1] paradigm in classrooms and schools (Harris & Cullen, 2008, 2010; Huba & Freed, 2000). This emerging paradigm focuses educational practices on what students learn rather than what they are taught. (Barr & Tagg, 1995; McCombs & Whisler, 1997; Brookfield & Preskill, 1999; Cross, 1999; Weimer, 2002). It challenges long-standing norms and removes the teacher, both literally and figuratively, as the center of the classroom and invites students to become co-creators of knowledge (King, 1993; Baxter Magolda, 1992).

Research reveals that a learner-centered paradigm greatly benefits students. Students who are collaboratively engaged in learning often achieve more impactful student outcomes and, as a result, often experience greater levels of educational attainment (Astin, 1993; Tinto, 1997; Zhao & Kuh, 2004; Pascarella & Terenzini, 2005; Carini, Kuh, & Klein, 2006; Cornelius-White, 2007). Unlike the methods used in conventional classrooms, strategies in the learner-centered paradigm are more relational,

[1] Throughout the literature on the learner-centered paradigm, it is not uncommon for some writers to use learner-centered, student-centered, and learning-centered synonymously. As Weimer (2002) posits in the introduction to her text on learner-centered teaching, student-centered focuses attention on student needs and is more congruent with a view that education is a product. Learning-centered changes the focus but also removes the student, the actual learner. Learner-centered, on the other hand, focuses the efforts of educators on learning and encourages critical reflection on what, how, and to what extent the student is demonstrating deep learning. As such, I too prefer learner-centered and will use this term throughout the dissertation.

create safe and trust-filled learning environments, are sensitive to students' cultural differences, and validate the learner as knower (Baxter Magolda, 1992; McCombs & Whisler, 1997; Bransford, 2000; Darden & Richardson-Jones, 2003; Salinas & Garr, 2009). These approaches, as Mentkowski and Associates (2000) proclaim, produce "learning that lasts" (p. 359).

Despite this research, the learner-centered paradigm continues to be only haphazardly adopted and though there is evidence that learner-centered practices are being tried sporadically (Hansen & Stephens, 2000; Lazerson, Wagener, & Shumanis, 2000; Harris & Cullen, 2010), the instructor paradigm remains the guiding philosophy of most faculty members and their institutions in higher education (Bok, 2005, 2006, 2013; Hansen & Stephens, 2000; Lazerson et al., 2000; Barr, 1998). While certainly a long-standing practice that has withstood generations, Pascarella and Terenzini (2005) found that the instructor-centered paradigm, which often manifests itself in the exclusive use of lecture followed by assessments that require students repeat what they have memorized, is not as consistently effective as environments that actively involve students in their own learning.

Problem Statement

The inconsistency that higher education faculty, administrators, and institutions as a whole have demonstrated in facilitating the change required to adopt the learner-centered paradigm, despite the positive outcomes repeatedly confirmed by empirical research, presents a quandary for society in general and higher education in particular. Specifically, the educational problem this study addresses is how faculty implementation

of learner-centered teaching and learning practices is influenced by organizational structures and policies.

The purpose of this dissertation is to better understand what encourages and supports faculty transition to a learner-centered practice and how these practices can more effectively serve the diverse learning needs of our growing body of students at a time when critical thinking and lifelong learning will continue to become more and more important (Bok, 2013; Duderstadt, 1999, 2009; Borg & Stranahan, 2010). As such, the primary research question is: How is faculty implementation of learner-centered teaching and learning practices influenced by organizational structures and policies? Secondary questions are:

1. What organizational structures and policies have the greatest impact on changes in faculty practice toward learner-centered teaching and learning?
2. What organizational structures and policies are most effective in supporting faculty use of learner-centered teaching and learning practices?

Theoretical Framework

Though much of the discussion on the modern professoriate highlights the increasing demands that faculty face to conduct research and continuously publish (Tierney & Bensimon, 1996; Geiger, 2011; Bok, 2013), especially at research universities, scholars studying faculty in the United States have consistently found an unwavering interest for all faculty in their teaching responsibilities. In his well-known book on *The American Academic Profession*, Finkelstein (1984) describes the academic profession as a teaching one, citing statistics that clearly indicate that faculty spend a

majority of their time in the instruction of students, a finding that other prominent scholars have highlighted as well (Bowen & Schuster, 1986). In fact, in their research, Schuster and Finkelstein (2008) note that in national surveys of college faculty, an overwhelming number of academics identify teaching as the most important part of their work.

Despite the prominent role that teaching plays in the life of a college or university faculty member, Austin (2011) and Geiger (2011) posit that very little time in graduate school is spent preparing prospective faculty for this aspect of their practice. This is a particularly meaningful oversight because, as Austin (2011) acknowledges, "…most faculty members work not in research universities of the sort where they were prepared, but in institutions where teaching is heavily emphasized" (p. 158).

Professional autonomy, which serves as an important attribute of the academic life, means that much of the teaching that faculty conduct is done in private and is practiced in the way that the faculty wish (Bowen & Schuster, 1986; Hagner & Schneebeck, 2001; Braxton, 2006). Absent formal training in pedagogy, many faculty resort to implementing teaching methods that are most congruent with their own learning styles or that mirror the methods practiced by their own past teachers (Leslie, Swiren, & Flexner, 1977).

The adoption of practices congruent with the learner-centered paradigm requires that faculty make a concerted effort to adopt new, innovative methods that challenge the dominant instructor-centered paradigm. Further, a large-scale adoption of teaching and learning practices across any large organization requires significant transformational

change. As such, Braxton's (2006) Theory of Faculty Professional Choices in Undergraduate College Teaching Role Performance and Rogers' (1995) Diffusion of Innovation serve as the conceptual framework for this study. These theories were carefully chosen and consistent with the suggestions of Trowler (2005) who advocates for the creation of sociologically based theories of teaching and learning to compliment theories that have largely emerged from psychology lenses. As he notes, "Combined with good theories of change, these have considerable potential to improve practice in the enhancement of teaching and learning in higher education" (p. 29). The conceptual frameworks chosen for this study will provide a more nuanced understanding of the complex choices faculty make in regard to their teaching role and the complex change process that must take place in the adoption of these innovations at both the micro and macro levels.

Braxton's Theory of Faculty Professional Choices in Undergraduate College Teaching Role Performance. Underpinning Braxton's (2006) theory of faculty professional choices are the much-researched tenets of role theory. A sociological based theory that utilizes a nod to the theater to describe predictable behaviors, or roles, that individuals tend to follow, role theory presumes that social expectations of certain roles will affect an individual's performance in that role (Biddle, 1986). As Braxton (2006) describes it, "…the greater the clarity of such role expectations, the greater the degree to which an individual performs the focal role in a convincing and appropriate way" (p. 16).

In addition to the concepts of role enactment, role expectations, and clarity of role expectations that make up role theory, important concepts of expectancy theory act as

what Braxton (2006) refers to as a helper theory. Based upon the work of V. H. Vroom, this theory suggests that out of a need to satisfy their own self-interests, individuals will purposefully choose actions based upon a desire to experience pleasure over pain (Isaac, Zerbe, & Pitt, 2001). Beliefs, attitudes, and perceptions, Isaac et al. (2001) identify are some of the factors that influence these decisions.

Utilizing an inductive theory construction process, Braxton (2006) includes the aforementioned theories along with other empirical findings that have emerged over the years in research on teaching and learning to craft a new theory on the many influences on faculty teaching decisions. Each, in their own way, communicates the many expectations and thus the related influences that impact the choices that faculty members make regarding their teaching role practices. According to Braxton (2006), this includes "…choice of pedagogical practices, choice of course assessment practices, application of good practice in undergraduate education, engagement in the scholarship of teaching, and adherence to norms of undergraduate college teaching" (p. 19).

The theory that emerged does not have stages, steps, or schemes. Instead, Braxton (2006) carefully lays out the many interacting layers of influence that most often play a role in this phenomenon. This includes statewide policies, college and university leaders, department chairpersons, and faculty motivation and effort.

Influential in teaching decisions are the expectations conveyed by states through the implementation of statewide higher education policies and practices. Performance budgeting, targeted budget allocations, institutional mission differentiation, outcomes assessment, and academic program review are five important state practices and policies

that relay to campus leaders the concern that state leaders have regarding faculty teaching and student learning as well as the level of expectation that they must achieve (Braxton, 2006). For example, state leaders who create budgetary incentives for satisfying goals related to improving student learning, Braxton (2006) explains, are clearly communicating high expectations for campuses to improve student learning.

When high expectations are communicated at the state level, campus leaders are often quick to adopt them as well. Therefore, Braxton (2006) suggests, when all five state policies and practices are adopted and communicated effectively, the decisions and actions of the president, provost, and other central administrators will be consistent with a greater concern for faculty teaching and student learning. Low or unarticulated expectations, on the other hand, leave campus leadership with the option to follow their own ideas and expectations.

Regardless of the influence of state expectations, Braxton's (2006) theory acknowledges that campus leaders have a significant influence on teaching role performance at their institution. The clear and unambiguous communication of their commitment to teaching by supporting development programs for faculty and by creating and supporting faculty rewards that explicitly value teaching and the scholarship of teaching (Hutchings et al., 2011) helps to create what Paulsen and Feldman (1995) term a "culture of teaching" (as cited in Braxton, 2006, p. 17).

In addition to influencing individual faculty directly, the teaching culture and related expectations brought forward by campus leaders also impacts departmental leaders who also play a very large role in the institutionalization of a culture of teaching.

This is especially true in their own department, the local place where many innovations regarding teaching and learning are taking place, greatly benefited by the consideration of discipline-specific epistemologies and practices (Hutchings et al., 2011). Department chairpersons can make clear their high expectations for teaching role performance when rewarding their faculty and by creating professional development opportunities for faculty to share experiences and teaching strategies with their colleagues. Additional ways that chairs can promote improvements of teaching, Braxton (2006) includes, are the ways that chairs complete their administrative duties. Swiftly sharing student teacher evaluations, encouraging faculty to partake in the programs offered by teaching centers, supporting the implementation of new practices, and providing release time to explore new approaches all provide clear support for professional choices in faculty teaching role performance.

While the expectations of the state, campus leaders, and department chairpersons all provide for some influence on faculty teaching role performance, an important caveat in Braxton's (2006) theory is the significant role of faculty motivation for effective teaching and the subsequent effort that they are willing to put forth. "At one extreme, faculty adherence to the norms of undergraduate college teaching requires minimal degree of effort, whereas engagement in the scholarship of teaching requires considerable degrees of effort" (p. 19). Tierney's (1997) research confirmed that faculty members are socialized to work for obtaining the academic rewards that are most prevalent in the cultural system of higher education. Consistent with this, Braxton (2006) suggests that extrinsic rewards, including promotion and tenure or salary increases, will often influence

the amount of effort put forth for teaching. (See appendix B for a chart illustrating Braxton's theory)

Rogers' Adoption of Innovation. Braxton's theory of teaching choices reveals the varied ways in which pedagogical decisions are influenced by individuals and institutions in higher education. The transformational change required for the wide-scale adoption of teaching decisions consistent with the learner-centered paradigm to take place will require presenting practitioners with an unfamiliar alternative to longstanding teaching practices and the philosophies that have guided them for generations. Purposefully challenging these long-standing norms and introducing new ways of thinking and practicing, the learner-centered approach to education is an example of an emerging innovation in higher education.

Innovation, according to Everett Rogers (1995), one of the most well-known and highly respected scholars on this topic, "…is an idea, practice, or object that is perceived as new by an individual or other unit of adoption" (p. 11). The newness of the idea, Rogers (1995) points out, is not determined by either the age of the scheme or the mere acquisition of new knowledge, but by the awareness that individuals or organizations have about it. As Rogers (1995) explains it, "Someone may have known about an innovation for some time but not yet developed a favorable or unfavorable attitude toward it, nor have adopted or rejected it" (p. 11). Simply put, if an innovation is new to them than it can be classified as an innovation (Rogers, 1995).

In practice, innovations introduce new ideas and fresh alternatives for solving problems or improving processes and a significant amount of research has been

conducted to better understand how innovations are diffused and adopted in a variety of fields and occupations over a period of time (Rogers, 1995; Bess & Dee, 2008). Bess and Dee (2008) point out that one way that scholars have sought to better understand and potentially manage organizational change in higher education is by studying the diffusion of innovations framework. This conceptual and theoretical framework will provide clarification on the process that needs to take place in order for learner-centered teaching practices to be adopted by more faculty and institutions.

Rogers (2005) framework for the process of innovation adoption acknowledges that a decision to adopt an innovation does not happen quickly and that the implementation of new ideas and practices requires a series of decisions over time. As such, he created a conceptual model that details a purposeful and linear process that individuals and organizations go through as they transcend the decision and adoption process.

The first stage of the innovation-decision process is the knowledge stage, a period when an individual first becomes aware of a particular innovation either by accident, as some researchers have found (Rogers, 1995), or through a more purposeful scanning of the external environment that an institution may be conducting either casually or as part of a formal market analysis (Bess & Dee, 2008). Through either of these processes, faculty members or administrators in higher education become aware of new practices taking place in the field or at other institutions.

Persuasion is the second stage, a period, Rogers (1995) notes, that often differs in meaning and connotation among scholars. For example, one common view is that at the

persuasion stage, a change agent will advocate for the adoption of an innovation and attempt to influence the opinion of others for this endeavor (Bess & Dee, 2008). In his theory, however, Rogers (1995) posits that this stage differs from that and that it contrasts with the cognitive aspects inherent in the first stage. More effective than the knowledge stage, the persuasion period often results in a general feeling about the innovation. These feelings are often experienced and developed by becoming more psychologically involved in the innovation and is recognizable when an individual "…actively seeks information about the new idea, what messages he or she receives, and *how* he or she interprets the information that is received" (Rogers, 1995, p. 168). This will result in either a positive or negative attitude being developed that may, in turn, often influence the subsequent actions of the individual or organization.

In the decision stage, a choice is made by an individual or organization to either adopt or reject the innovation. Leveraging the risk involved in adopting a change, Rogers (1995) has found that most individuals or organizations will seek to test out the innovation on a trial basis or at least critically examine the experiences of peers who carried out a similar experiment. Dubbed "trial-by-others," Rogers (1995) notes that these circumstances can often act as a comparable substitute for initiating an independent study. If the innovation is deemed to provide an advantage over current practices, it is likely that adoption will take place. Conversely, if the outcomes of the study or observation is not convincing, it is quite possible that the adoption of the innovation will be rejected.

Though it is common for individuals or organizations to decide to adopt an innovation, actual follow through is less certain. As such, the fourth stage, implementation, requires that the innovation actually be put into use. Still uncertain of the outcomes and consequences that may be the result of the adoption, Rogers (1995) notes that, "So much active information-seeking usually takes places at the implementation stage" (p. 173).

While the implementation stage may be the end of the innovation adoption process for many individuals or organizations, a final fifth stage called confirmation may take place in some settings (Rogers, 1995). As the name suggests, in this stage, individuals or organizations seek further information regarding their decision to either adopt or reject the innovation. Depending on the results of this search and subsequent reflection, the previous decisions may be supported or a reversal may be in order if appropriate.

Adopter categories. When innovations are brought forth, the rate of adoption by individuals within a social system will vary greatly with some quicker to embrace the innovation and others more slow to accept the change (Rogers & Shoemaker, 1971; Rogers, 1995). To better identify these differences, early research studies conducted by diffusion scholars resulted in a desire to label adopters and a glut of unique adopter categories were created by the researchers who were studying them (Rogers, 1995). However, with no widely accepted category standards, Rogers (1995) points out, comparing studies and findings often proved to be difficult until ongoing study revealed

that when the number of adopters is plotted on a graph, it results in a S-shaped or bell shaped curve (see appendix C). As Rogers (1995) describes it, the rate of distribution:

> …rises slowly at first when there are few adopters in each time period. It then accelerates to a maximum until half of the individuals in the system have adopted. Then the S-curve increases at a gradually slower rate as fewer and fewer remaining individuals adopt the innovation (p. 257).

With repeated confirmation by empirical research of the S-shaped and bell shaped curve of adoption, more standardized descriptors emerged.

Rogers (1995) created five adopter categories that he identified as "ideal types" (p. 263). Innovators, on the far left hand side of the bell curve represent the smallest group of adopters (2.5%) as these individuals are less averse to risk, willing to more easily try out new technologies, approaches, or methods. While their rashness may result in less respect for these actors by colleagues within an organization, Rogers (1995) notes that these individuals are important players in the diffusion process, often responsible for introducing new and cutting edge ideas into the system in the first place.

Early adopters, research has found, are the second group of adopters. Representing 13.5% of adopters, these men and women are often the most respected individuals in the organization and fellow colleagues often seek them out for advice regarding the innovation (Rogers, 1995). Very cognizant of the important role that they play in the organization and the high esteem that co-workers hold them in, early adopters are careful about their decisions, but are trusted by others to adopt an innovation and report back about the outcomes.

Making up nearly one-third of all adopters, the early majority individuals are more careful when adopting new innovations, almost never leading the innovation movement and often taking more time to evaluate an idea and make a decision to adopt it or not. These individuals do, however, provide an important bridge between the early adopters and late majority by adopting the innovation themselves just before the average member of the organization will (Rogers, 1995).

Innovation for the next group of individuals identified as the late majority, gives them pause and these men and women are slow to adopt new ideas until the majority of their co-workers in the system have already done so. Making up another sizable one-third of adopters, the will of the organization and the pressure from peers and colleagues often serves as the impetus for final adoption.

The last individuals to adopt an innovation are the laggards. Revealed through research to make up 16% of adopters, these men and women are often weary of new ideas and those who present them. Hesitant and conservative, laggards most often present resistance to the adoption of innovation, waiting until they are absolutely certain and confident that an innovation will work.

Using these adopter categories in this study may help identify the attributes that different educators adopted in their own adoption of learner-centered practices in their work.

Conceptual Framework

The work of both Braxton (2006) and Rogers (1995) as well as the research, experiences, and related findings shared by Beichner et al. (2007) of the SCALE-UP

project, greatly informs the conceptual framework. They are combined here in an effort to create the lens that will guide this study.

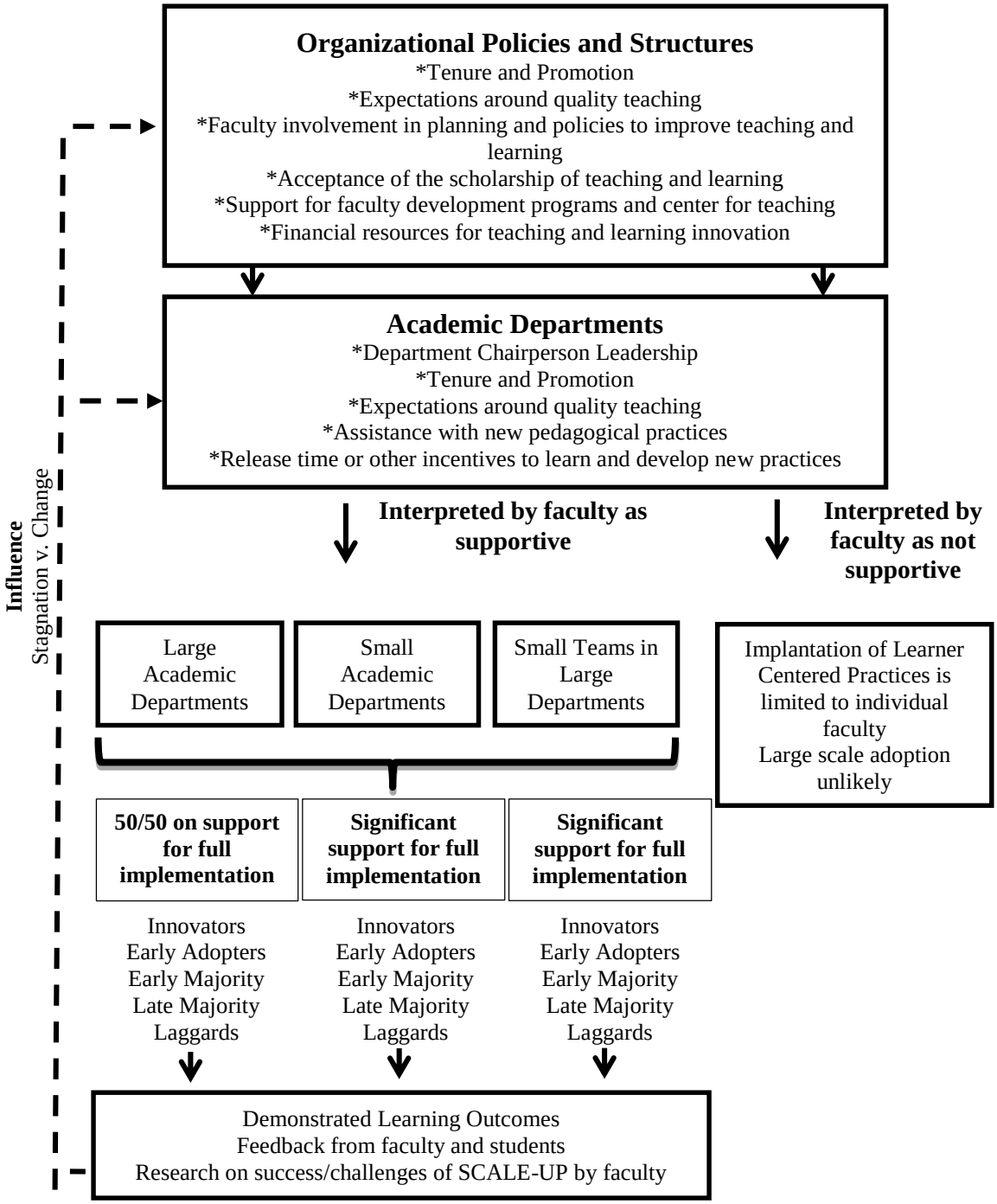


Figure 1. Conceptual Framework

In this framework, how faculty interpret the organizational policies and structures of the institution is a critical indicator of the adoption, implementation, and sustainment of the learner-centered paradigm. Wergin (1993) suggests, however, that current thought in academia acknowledges the important role that departments or academic units have in meaningful change efforts. Too many times, scholars posit, change is viewed through the lens of the individual, ignoring the important and extremely influential role that the academic discipline as well as the local department and related leadership therein, play in this complex process (Wergin, 1993; Bensimon, Ward, & Sanders, 2000; Lee, 2004). As a result, the actual progression of interpretation that faculty in this framework negotiate is greatly influenced by how the institution's mission and related organizational policies and structures are practiced by the academic department that the faculty member is a part of.

Wergin (2001) notes that, "…organizational change is more likely to occur when academic units are encouraged to experiment and take risks" (p. 24). In a context of departmental support, for example, if a critical mass of faculty interpret the college's or university's policies to be supportive of learner-centered practices, it is more likely that a significant adoption of learner-centered practices can be initiated. Congruent with the findings of Beichner et al. (2007), however, how much departments embrace these changes will vary based on the size of the department. The most likely to adopt these changes, Beichner et al. (2007) writes, are small departments that are often more nimble and more quick to embrace innovations and whose smaller number of faculty makes consensus easier. Larger departments, on the other hand, can frequently be more

challenging with the average department often evenly split between those who support the adoption of innovation and those who would prefer to maintain current practices (Beichner et al., 2007). Beichner et al. (2007) found that success in large departments is often easier when there is a smaller subgroup of faculty willing to spearhead the initiative. Congruent with Rogers' (1995) innovators, these small groups of faculty are able to introduce the learner-centered concept, take the lead in the implementation, and slowly start to influence others in the department to adopt the change as well.

When a successful adoption takes place, the successes and challenges associated with this adoption, such as demonstrated learning outcomes by students, feedback from faculty and students about their experiences, and any internally or externally published research may influence the policies and practices of the department as well as the policies and structures of the overall institution. Positive results may influence additional change initiatives in the department and across the institution while less positive experiences could lead to stagnation.

Conversely, if a critical mass of faculty, through their departmental lens, interpret the college's or university's policies to be unsupportive of learner-centered practices, it is highly unlikely that large-scale adoption of learner-centered practices will take place. Instead, faculty will continue to employ learner-centered strategies on an individual basis until a time when the policies and structures of the institutions and their department or academic unit are interpreted to be more supportive.

Purpose of Study

The purpose of this study is to present a more nuanced understanding of how faculty members make sense of their institution's organizational structures and policies and the effect that this audit has on their decision to embrace the learner-centered paradigm and its related teaching practices. While these interpretations will include those structures and policies that are overt, this study seeks to also understand the unwritten policies and practices that, while not as clear, contribute equally to this phenomenon.

Cognizant that the academic department contributes to these interpretations as well, much attention will be paid to how the lived experiences at the departmental level and the leadership of the department chairperson can further influence faculty. Additionally, Bok (2013) argues that even though final decisions about teaching rests with the faculty, it is the institution's academic leaders, the president, the provost, and the deans, who are best able to lead the charge for change on their campus. As a result, the role of these individuals will also be examined.

The findings from this research will extend what we currently know about how faculty make teaching decisions, especially those instructional choices that are most congruent with the learner-centered paradigm. This is an important contribution because, as Hora (2012) discovered, there is not much known about how individuals interpret the organizational environment in which they are a part of and how this influences their teaching decisions. Better understanding this will allow academic leaders at all levels of higher education to be able to implement and manage policies and structures that will

more effectively allow a more significant adoption of learner-centered practices to take place.

CHAPTER 2

REVIEW OF THE LITERATURE

The areas of literature reviewed for this study are a) common pedagogical practices in the learner-centered paradigm, b) the impacts associated with its adoption, c) a detailed exploration regarding the reasons why the adoption of this paradigm has been slow in higher education, and d) a discussion of organizational change in higher education.

Practices

The literature on the learner-centered paradigm and its related practices is robust and includes significant contributions from researchers and practitioners alike representing nearly every area of higher education. Scholars examining this topic include academics in the field of education (Weimer, 2002; Light, 2001; Cross, 1999; Kinzie, Gonyea, Shoup, & Kuh, 2008; Amey, 1999), psychology (Blumberg, 2009; McKeachie, 2002; Ciani, Summers, Easter, & Sheldon, 2008), the sciences (Silverthorn, 2006; Michael, 2007), engineering (Shapiro, 2006), business (Sharp, 2003; Snyder, 2003), medicine (Hmelo-Silver & Barrows, 2008; Macaulay & Nagley, 2008) and a number of other disciplines in the arts and letters (Tagg, 2003; Harris & Cullen, 2010; Zlotkowski, 2001). For example, Elizabeth Barkley, who co-wrote a highly regarded handbook on

collaborative learning techniques for college faculty with her colleagues (Barkley, Cross, & Major, 2005), is a music faculty member.

One of the most important and most often cited pieces in the learner-centered literature is the seminal work of Chickering and Gamson (1987). In their *Seven Principles of Good Practice in Undergraduate Education*, these well-known scholars look to improve education by using a half decade's worth of research in an effort to clearly articulate the practices that they felt would, when enacted together, greatly impact education (Kuh, Pace, & Vesper, 1997; Pascarella & Terenzini, 2005). Although this document predated the learner-centered movement that emerged in the 1990s, Cross (1999) notes that the principles started to help practitioners understand how to better engage students in learning. They do this by encouraging faculty to develop stronger professional relationships with their students, increase collaboration and cooperation between students, create opportunities for active learning, provide prompt feedback on student work, and respect the diverse talents and learning styles that students possess (Chickering & Gamson, 1987). Much of what they sketched out in this short article was confirmed several years later when the American Psychological Association's Presidential Task Force for Psychology in Education released their fourteen learner-centered principles (McCombs, 2003; Crick & McCombs, 2006). Under the direction of Barbara McCombs, one of the most active and highly cited scholars in the learner-centered movement, these principles can be seen in emerging scholarship regarding the learner-centered paradigm. Research studies by Bosch et al. (2008), Chickering and Gamson (1987), and those compiled by Pascarella & Terenzini (2005) confirm that many

of these methodologies create higher quality learning experiences. The latter researchers, for example, have found that interactions between a student with his or her faculty members and peers both inside classroom as well as outside, result in great gains in a number of desirable learning outcomes.

Following the work of Chickering and Gamson (1987), a number of higher education leaders have talked about a shift in the operating paradigm of institutions, individual faculty, and administrators. Challenging the long-standing instructor paradigm, these researchers have advocated for a significant change in how higher education approaches the task of teaching (Barr & Tagg, 1995; Weimer, 2002; Tagg, 2003; Harris & Cullen, 2010). To these educators, a new paradigm, one that focuses not on what the instructors do but rather on what the students are learning is long overdue (Blumberg, 2009). Supported by research emerging from the cognitive sciences (Bransford, 2002; Alexander & Murphy, 2000; Ramsden, 2003; Innes, 2004), a learner-centered paradigm has emerged in higher education. Focusing on what and how students are learning as well as how they are using what they are learning is at the core of this new paradigm (Barr & Tagg, 1995; Weimer, 2002; Tagg, 2003; Harris & Cullen, 2010; Bransford, 2000).

As the most prominent scholars in this area explain, practice in the learner-centered paradigm fundamentally changes long held assumptions that emphasize teaching over learning (Barr & Tagg, 1995; Weimer, 2002; Tagg, 2003; Doyle, 2008; Thompson, Licklider, & Jungst, 2003) and dismantles what Cross (1999) refers to as the "hierarchical model in which those who know teach those who do not know" (p. 259). It does not

presume that lecture, for example, is not learner-centered (Barr, 1998), but does place increased value on the learning that can take place as a result of actively doing (Machemer & Crawford, 2007; Silverthorn, 2006; Zlotkowski, 2001; Boyer Commission on Educating Undergraduates, 1999; Ewell, 1997) and reframes the relationship between faculty and students (Weimer, 2002; Barr & Tagg, 1995). Operating under this paradigm removes, as King's (1993) famously titled article suggested, the teacher "from the sage on the stage to the guide on the side."

Operating under the learner-centered paradigm results in practices that utilize a number of different teaching methods (Blumberg, 2009; Smith & MacGregor, 1992). Moving from the provider of information to the facilitator of learning involves the adoption of institutional philosophies and classroom level teaching approaches that are consistent with a reframing of the purpose of course content, the role that an instructor plays in a classroom, where the responsibility for learning is located, what the purpose for assessment is, and the balance of power between the instructor and students (Weimer, 2002; Harris & Cullen, 2010; Blumberg, 2009). This can be done through a variety of means and a number of books and journal articles have been written that highlight specific practices that can be implemented at the classroom and institutional level (Doyle, 2008; Harris & Cullen, 2010; Weimer, 2002; Blumberg, 2009; Barkley et al., 2005; McKeachie, 2002; Smith & MacGregor, 1992). A careful and thorough examination of the literature reveals that these practices most often include active and collaborative learning (Bonner, 2010; Michael, 2007; Umbach & Wawrzynski, 2005; Cross, 1999; Smith & McGregor, 1992), high-impact practices (Kuh, 2008a; Hu, Kuh, & Li, 2008;

Brownell & Swaner, 2009), and engaged learning (Hodge, Baxter Magolda, & Haynes, 2009; Beere et al., 2011; Smith, Douglas, & Cox, 2009; Umbach & Wawrzynski, 2005).

Active and collaborative learning. Research reveals that while active and collaborative learning can take on a number of different forms, what binds each of the different practices together is the purposeful intentionality behind the designs that faculty utilize to create activities that satisfy desired learning outcomes (Barkley et al., 2005; Bransford, 2000). These activities provide students with an opportunity to be actively engaged in their own learning (Bonner, 2010; Bosch et al., 2008; Blumberg, 2009; Bransford, 2000; Mentkowski & Associates, 2000) and can facilitate knowledge-building by constructing new meanings and building upon existing knowledge (Hmelo-Silver & Barrows, 2008; King, 1993; Bruffee, 1995; Innes, 2004). This emphasis on *active* participation is congruent with the philosophy of education as expressed by a number of philosophers throughout the generations. For example, Henson (2003) notes that philosopher John Locke argued that the best way to learn is through experience and that in the early 1900s John Dewey emphasized that individuals learn best by doing (ASHE, 2007). These ideas have been shared more recently as the Johnson Foundation (1987) articulated clearly that, "learning is not a spectator sport" (as cited in Snyder, 2003, p. 159), a sentiment that Chickering and Ehrmann (1996) echo verbatim nearly a decade later as well.

Chickering and Ehrmann (1996) state that active learning involves the creation of activities that require that students, "…talk about what they are learning, write about it, relate it to past experience and apply it to their daily lives. They must make what they

learn part of themselves" (p. 4). No longer, King (1993) cautions, should students be memorizing a text or lecture. Instead, they must use their own voice and their own experiences in order to develop the skills that will help them become advanced learners (Mentkowski & Associates, 2000).

Constructivist in nature, collaborative learning provides students with the opportunity for learning by solving problems, drawing connections, understanding the perspectives of other group members, creating new knowledge, and applying solutions together in small groups in collaboration with the teacher (Mentkowski & Associates, 2000; ASHE, 2007; King, 1993; Cross, 1999; Smith & MacGregor, 1992). An important attribute of this approach is that students in this practice are co-laboring and held responsible for the learning of their classmates as well (Janssen, Kirschner, Erkens, Kirschner, & Paas, 2010; Barkely et al., 2005; Kuh, Kinzie, Schuh, & Whitt, 2005; Blumberg, 2009; Bonner, 2010; Buffee, 1992). This is extremely important because students teaching other students, McKeachie, Pintrich, Lin, & Smith (1986) have found, is one of the most effective teaching methods that can be instituted in higher education. As Barkely et al. (2005) writes, this collaboration between classmates helps develop, "autonomous, articulate, thinking people…" (p. 7).

What often makes these active and collaborative learning experiences particularly powerful is the relationship between what students are doing in class and the connection that it has to real life (Kuh et al., 2005; Tagg, 2003; Savery & Duffy, 2001; Bransford, 2000). Dubbed "student performances," Tagg (2003) suggests that his research and experience has revealed that learning that is attached to real world problems is more

meaningful to students and results in a greater likelihood that students will more readily retain what they have learned. This is congruent with suggestions from Savery and Duffy (2001) and similar to the findings that Light (2001) extrapolated from his large-scale study of college students as well. Real world application of in-class concepts, theories, and ideas is not only extremely important for learning, but is very much valued by the students themselves (Light, 2001).

The literature on active and collaborative learning highlights a variety of learning techniques, honed, Matthews and Cooper (1995) note, after many years of development. Though not an exhaustive list, some of the more prominent research indicates that active and collaborative practices include simulations (Snyder, 2003; Grauerholz, 2007; Smith & MacGregor, 1992), role playing exercises (Snyder, 2003; Grauerholz, 2007), peer teaching (Kinzie et al., 2008), projects that require that students work together both inside and outside of class (Ciani et al., 2008; Kinzie et al., 2008), problem-based learning (Kinzie at al., 2008; Knowlton, 2003; Rhem, 1998; Machemer & Crawford, 2007; Weiss, 2003; Barkley et al., 2005; McKeachie, 2002; Savery & Duffy, 2001; Blumberg, 2009; Smith & MacGregor, 1992), service learning (Eyler & Giles, 1999; Zlotkowski, 2001a; Kinzie et al., 2008), and writing assignments that require the submission of multiple drafts or the use of writing groups (Snyder, 2003; Kinzie et al., 2008; Smith & MacGregor, 1992).

High-impact practices. One of the more recent developments in the area of active and collaborative learning has been the development of high-impact practices (Kuh, 2008a). Initiated by the Association of American Colleges and Universities, the

highly influential report on high-impact practices was part of the organization's Liberal Education and America's Promise (LEAP) plan and its findings represented the culmination of over ten years' worth of research. The ten practices that Kuh (2008a) identified have a strong foundation in a variety of research methods that included interviews coupled with analysis of data extrapolated from the National Survey of Student Engagement (NSSE). These high-impact practices include first-year seminars, common intellectual experiences, learning communities, writing intensive courses, collaborative assignments and projects, undergraduate research, diversity/global learning, service learning, internships, and capstone courses and projects (Kuh, 2008a).

Each of the high-impact practices, Kuh (2008a, 2008b) found, has a significant impact on student learning and success. According to an AACU press release in October of 2008 announcing the reports publication, the organization boasted that the identified practices are particularly powerful and impactful for students because, "…they increase the frequency of meaningful interactions with faculty and peers, induce students to spend more time and effort on research, writing, and analytic thinking, and involve them in more hands-on and collaborative forms of learning." The finding that students benefit from student and faculty interaction has been well documented in the higher education literature and is the hallmark of active and collaborative learning (Astin, 1993; Tinto, 1993; Kuh & Hu, 2001; Pascarella & Terenzini, 2005)

While many educational practices can have beneficial outcomes in regards to learning, Kuh discovered that there are some that are more effective than others, a finding confirmed again by Finley (2011) a few years later when she assessed the practices.

These high-impact activities, when implemented well, more often than not resulted in deeper learning and higher levels of self-reported gains from students (Kuh, 2008a; Lopatto, 2010; Finley, 2011). Additionally, while these practices have been shown to positively influence all students in higher education, Kuh (2008a) found that they were particularly impactful for those students who have too often underachieved in higher education (Finley, 2011; Brower & Inkelas, 2010). As such, Kuh, (2008a) strongly suggests that all students have access to and participate in at least two significant high-impact practices during their time in college. One ideally would be during the first year and the second would come later in their academic career, potentially related to the student's major (Brownell & Swaner, 2009).

Brower and Inkelas (2010) note that we know more about some high-impact practices than we do about others. Brownell and Swaner (2009), for example, found that of the identified practices that emerged from Kuh's (2008a) research, most of the literature is directed towards practices such as first-year seminars, learning communities, research for undergraduates, and service learning.

Engaged learning. In its report on Liberal Education and America's Promise initiative, the Association of American Colleges and Universities (2007) provide educators with a discussion on the educational outcomes that students need to obtain in order to be successful in the twenty-first century (Hodge et al., 2009). Including growth and development in the interpersonal, intrapersonal, and cognitive areas, they note that these outcomes include: "knowledge of human cultures and the physical and natural

world, intellectual and practical skills, personal and social responsibility, and integrative learning" (Hodge et al., 2009, p. 16).

To many in higher education, one way to develop this form of learning, often described as transformative, is through engaged learning (Beere et al., 2011; Hodge et al., 2009; Smith et al., 2009; Harward, 2007; Umbach & Wawrzynski, 2005; Bowen, 2005; Kuh, 2008b). As Bowen (2005) explains, engagement in higher education includes four unique types, different yet connected. First, students are engaged in the learning process, actively involved in their own learning. The second form of engagement is a student's connection with the object of their study. As Bowen (2005) notes, this is a chance to encourage learning by allowing the students to have direct experience. The third is to provide students with engagement with the context of a subject, the moral and ethical issues that come about when civic and social contexts are made evident. Lastly, there is engagement in regards to the human condition. Engaged learners, Bowen (2005) posits, "are those who complement and interpret what they learn from others with direct knowledge based on personal experience, who develop appropriately complex understandings situated in relevant contexts, and who recognize learning's moral implications and consequences" (p. 7).

In many ways, engaged learning as part of the learner-centered paradigm is strikingly similar to active and collaborative learning and the high-impact practices that were discussed earlier. In fact, as both a means and a means to an end, engaged learning can include practices such as active and collaborative learning and service learning (Swaner, 2007; Bowen, 2005; Kuh, 2008b). What warrants a separate discussion,

however, is that the concept of engagement introduces the important relationship that learners have with their own learning (Bowen, 2005). This engagement, scholars have found, can result in meaningful gains in a number of learning outcomes (Astin, 1993; Pascarella & Terenzini, 2005)

In his theories of cognitive development, Kegan (1994) introduced the idea of self-authorship, a concept that Baxter Magolda (1999, 2004, 2009) has greatly built upon. Individuals who reach self-authorship develop beyond the early knowing stages that Baxter Magolda (1992) identified where students uncritically accept what they are being told by those in authority. When one reaches self-authorship, this student is able to "evaluate information critically, form their own judgments, and collaborate with others to act wisely" (Hodge et al., 2009, p. 18). Though Baxter Magolda's (2004, 2009) longitudinal studies have shown that self-authorship did not emerge for these participants until after college, she does, writing with her colleagues, posit that engaging students as undergraduates raises the chance that they may develop this important stage of development earlier (Hodge et al., 2009).

To help facilitate the journey towards self-authorship, institutions and faculty must engage students in a way that allows them to participate in increasingly complex opportunities for meaning making (Hodge et al., 2009). This can happen both inside and outside of the classroom. The connection between involvement in extracurricular activities and student engagement has been documented in a number of different studies (Astin, 1993; Pascarella & Terenzini, 1995).

Impacts and Outcomes

If the learner-centered paradigm is to be fully adopted in higher education, a more complete understanding of the impacts associated with its practice must be better understood and more easily accessible to faculty, administrators, and institutions considering the paradigm and its related practices (Blumberg, 2009; Bok, 2005, 2006). Bok (2006, 2013) theorizes that even though faculty often update their course content to stay current with changes in the knowledge base, it is rare for faculty to modify their teaching methods or the philosophies that guide them. As such, he joins researchers such as Weimer (2002) and Ewell (1997) who posit that faculty need to alter their practice based on reliable evidence that has emerged from empirical studies related to the impacts of a learner-centered paradigm. Bok (2006) writes that he is hopeful that, "Once college officials receive the results, they will presumably do what they can to encourage greater use of the recommended methods, using the findings as ammunition to persuade their faculties to cooperate" (p. 330).

Throughout the learner-centered literature, a number of prominent studies have found that the practices congruent with the learner-centered paradigm, most often through active and collaborative learning, high-impact practices, and engaged learning, can facilitate students cognitive and personal growth and influence their experience at their university in general and in the classroom in particular (Astin, 1993; Weimer, 2002; Pascarella & Terenzini, 2005; Doyle, 2008; Harris & Cullen, 2010). Using a variety of both qualitative and quantitative methods, researchers have found that participation with

faculty whose practice is aligned with the learner-centered paradigm positively influences a number of desirable learning outcomes for students.

Through his detailed meta-analysis, Cornelius-White (2007) found that learner-centered teaching variables resulted in above average outcomes in a variety of important learning areas for students. He noted that research on learner-centered practices has suggested that, "Correlations for participation, critical thinking, satisfaction, math achievement, drop-out prevention, self-esteem, verbal achievement, positive motivation, social connection, IQ, grades, reduction in disruptive behavior, attendance, and perceived achievement are all above average…" (p. 134). Additional research has found that impacts and outcomes include: critical thinking skills (Kuh, et al., 1997; Eyler & Giles, 1999; Hu, et al., 2008; Darden & Richardson-Jones, 2003; Kuh, 2008a), deeper learning and enhanced academic performance (Tinto, 2003; Eyler & Giles, 1999; Cross, 1999; Kuh et al., 1997; Zhao & Kuh, 2004; Cherney, 2008), student persistence (Tinto, 1997, 2000a, 2000b, 2003; Braxton, Milem, & Sullivan, 2000; Kuh, 2008b), vocational preparation (Hu, et al., 2008; Aldas, Crispo, Johnson, & Price, 2010; Cabrera, Colbeck, & Terenzini, 2001), academic goal attainment (CCSE, 2003), motivation to learn (Kuh & Hu, 2001; Cornelius-White, 2007), and overall satisfaction with college (Chang & Smith, 2008; Laird, Shoup, Kuh, & Schwarz, 2008; Zhao & Kuh, 2004).

Critical thinking, deeper learning, and enhanced academic performance. Research that has specifically examined the influence of deep learning approaches has found that students often self-report meaningful interpersonal, intrapersonal, and cognitive development (Kuh, 2008a; Laird et al., 2008; Brownell & Swaner, 2009). For

example, Laird et al. (2008) used NSSE data from over 80,000 seniors and 10,000 faculty members and found that the frequent and skilled use of deep approaches to learning, congruent with the learner-centered paradigm, is related to higher levels of self-reported gains in both intellectual and personal development. There was also a positive connection, though rather moderate they note, with satisfaction with college. Kuh (2008a) found similar findings in assessing the outcomes of high-impact practices. Though not always equal in effect, he did find evidence of deeper learning as a result of student participation in high-impact practices.

Deeper learning is often the result of a number of cognitive factors, including the ability of students to more easily recall what they have learned (Tagg, 2003; Cherney, 2008). This is particularly important, Cherney (2008) writes, because as several studies she examined have found (Ellis & Rikard, 1977; Rickard et al., 1988) and her own experience supports, students have poor memory and often fail to retain many of the concepts that they learned in a prior class. Because of this, Cherney (2008) studied the effect of active-learning techniques on memory of course content in four different undergraduate psychology courses that involved 314 students. She found that students were able to more easily recall learning that took place through active engagement exercises in their course work compared to lessons that were taught solely through the use of lecture.

Active engagement in learning that is the foundation of the learner-centered paradigm and practices allows students to connect what they were learning in their classes with their own lives. This is particularly important because, as Ewell (1997)

writes, students are often unable to see the deeper connections of what they are learning with their own experiences and the world that they live in. Empirically, studies of college students have discovered that students reported more learning and greater satisfaction when they were able to relate their class work to their lived lives (Light, 2001; Darden & Richardson-Jones, 2003). As such, Baxter Magolda's (1992) research on cognitive development and ways of knowing has led her to assert that to be most effective, learning must be situated in a student's experience, an idea that Kuh (2008a) emphasizes as well. This includes a better understanding of the ways that various cultures throughout our communities gain and transmit knowledge (Bransford, 2000; Ewell, 1997) and requires an understanding of and a respect for what the learner already knows (Shulman, 1999; hooks, 1994; Baxter Magolda, 1992).

When done correctly, practices congruent with the learner-centered paradigm involve active engagement and a re-framing of the relationship between teachers and students that is asset-based and values the contributions of each in the co-construction of knowledge (hooks, 1994; Freire, 1993). As such, research on learner-centered practices and the positive connection they have to critical thinking, deeper learning, and enhanced academic achievement has been confirmed repeatedly throughout the literature. For example, Kuh et al. (1997) examined Chickering and Gamson's (1987) Seven Principles. Choosing faculty-student contact, collaboration between students, and active learning from the list of suggested practices, Kuh et al (1997) analyzed data from the College Student Experiences Questionnaire that surveyed nearly 6,000 students from a variety of baccalaureate, master's, and doctoral granting schools. They found that of the three

variables they studied, active learning and collaboration between students were the most consistent predictors of learning gains for students. This was true, they note, at all of the different types of institutions that they considered. Later studies by Cabrera et al. (2001) also suggests that practice in the student-centered paradigm that includes the delivery of collaborative learning results in growth of cognitive and affective outcomes such as stronger analytical skills, personal development, a deeper understanding of science and technology, and even a deeper appreciation for art.

Despite the utility of the findings like those described above, many of the studies on the impacts and outcomes of the learner-centered paradigm point to benefits emerging from broad pedagogies such as active-learning or high-impact practices, often failing to indicate what specific practices are particularly effective. To this end, recently emerging studies have started to examine the impacts and outcomes of specific active and collaborative learning, high-impact, and engaged learning practices and strategies (Weiss, 2003; Zhao & Kuh, 2004; Hu, Kuh, & Li, 2008; Brower & Inkelas, 2010). When combined with previous research, these findings shed some light on the specific benefits of various learning approaches.

One example of this can be seen in the work of Seymour, Hunter, Laursen, and Deantoni (2004) and Hu et al. (2008). Seeking to learn what activities consistent with the learner-centered paradigm resulted in the greatest learning gains for students, these latter researchers examined the learning outcomes for students engaged in the high-impact practice of student/faculty research. Analyzing rich data from the College Student Experience Questionnaire research program that probed the academic experiences of

students between 1998 and 2004, they found that participation in student research impacted positive gains in intellectual development. Lopatto (2010), using the results of the Summer Undergraduate Research Experience survey to add some specificity to the benefits of undergraduate research, notes that these experiences grow academic skills including inquiry and analysis.

Literature on learner-centered practices also includes research on the critical thinking and deeper learning outcomes of learning communities (Zaho & Kuh, 2004; Pascarella & Terenzini, 2005; Brower & Inkelas, 2010), problem based learning (Weiss, 2003; Hmelo-Silver & Barrows, 2008; Ahn & Class, 2010), service learning (Eyler & Giles, 1999; Pascarella & Terenzini, 2005), and first-year seminars (Engberg &Mayhew, 2007; Rocconi, 2010).

Student persistence. A variety of studies have revealed that while higher education in the United States has improved in some aspects of providing for greater access to higher education (Kinzie et al., 2008; Applegate, 2011), a significant problem with student persistence to degree completion continues to vex the academy (Tinto, 1993, 1998; Braxton, 2000, 2008; Kuh et al., 2005; Laird et al., 2008; Applegate, 2011). Dubbed the "departure puzzle" by Braxton (2000), the crisis surrounding student persistence becomes clear when relevant statistics are considered. For example, according to the National Center for Educational Statistics (2010), only 22% of students complete their education at community colleges within three years and just over half complete their degrees at four year institutions within six years (Applegate, 2011). Nearly 75% of these students, Tinto (1993) found in his research, departed their

institutions during their first year. This is particularly important, Kinzie et al. (2008) notes, because when students return for a second year of college, the likelihood that the student will graduate greatly increases.

While this issue has been explored from a variety of different perspectives, for many years, Tinto (2000b) charges, the role of the college classroom in student persistence has been largely ignored in the literature. More recently, however, a number of researchers attempted to remedy this disconnect with empirical studies that explored the possible connection between the academic experiences of students on campus and their decisions to depart or the likelihood that they will persist (Tinto, 2006, 2000b, 1997; Kinzie et al., 2008; Nora, Cabrera, Hagedorn, & Pascarella, 1996; Braxton, 2000; Cabrera et al., 2002; Laird et al., 2008).

This emerging research suggests that the more students are engaged in the academics of an institution, the more likely they are to persist to degree completion (Astin, 1984; Pascarella & Terenzini, 2005; Kinzie et al., 2008; Laird et al., 2008). While these studies have resulted in a number of suggestions for changes in the related practices of higher education, one outcome has been a deeper exploration into the role that learner-centered practices can play in facilitating classroom experiences that may result in less students departing higher education without their degrees (Braxton, et al., 2000; Braxton, Jones, Hirschy, & Hartley, 2008; Cabrera et al., 2001; Tinto, 2000b; Kinzie et al., 2008). To this end, active and collaborative learning strategies and high-impact practices such as increased group work, additional opportunities for student-faculty research, involvement in service learning, and participation in first-year seminars and learning communities

have been implemented at a number of institutions (Tinto, 2000b; Pascarella & Terenzini, 2005; Finley, 2011).

To better understand which active-learning techniques influenced students' social integration, commitment, and departure decisions, Braxton et al. (2000) completed a longitudinal study involving 718 first-time, first-year students who were surveyed three times throughout their first year on campus. Learner-centered techniques that were specifically evaluated included in-class discussions, group work, and higher order thinking activities that required students to think critically and utilize deep level learning. Additionally, the researchers considered the use of a more traditional classroom approach called knowledge level exam questions that only requires surface knowledge in response to examinations pertaining to the memorization of course content. They found that, with the exception of group work, each of the other indices of active learning had a direct and indirect influence on a students' intent to return. Several years later, seeking to refine these conclusions, Braxton et al. (2008) confirmed these findings in a follow-up empirical study.

Empirical evidence suggests that high-impact practices too have a positive impact on persistence (Kuh, 2008a; Finley, 2011). Kuh (2008a) has found that participation in activities that are high-impact resulted in increasing retention rates from the first to second year. Interestingly, though this was true for all students, he notes that retention was even higher for Hispanic students, an increasingly growing population of students in higher education.

Vocational preparation. Impacts and outcomes of learner-centered practices, research reveals, also includes positive correlations with increased vocation preparation for students (Hu, et al., 2008; Aldas et al., 2010; Cabrera et al., 2001). Active and collaborative learning, high-impact practices, and engaged learning, provides students with an opportunity to explore possible interests through practices that allow students to connect in the classroom learning with activities outside the classroom. In environments that range from research with faculty to internships, practicums, and service learning, students' experiences with these practices provides for greater vocational clarity as their academic abilities were confirmed in outside, real world settings (Mentkowski & Associates, 2000; Baxter Magolda, 1992). In one study, for example, Aldas et al. (2010) researched the vocation preparation of students at Wagner University. Utilizing NSSE data in concert with students and faculty interviews, these researchers discovered that learner-centered practices developed students' vocational outcomes:

> The experiences of our faculty and students provide powerful testimony to the contribution of internships, practica, and research to the development of these learning outcomes. In turn, these learning outcomes foster the development of students' emerging professional identities…we see students' heightened confidence as they successfully engage within diverse communities and expand their sense of self, as well as what they are capable of contributing (p. 28).

Barriers

Despite the countless reform efforts that have emerged as a result of the ongoing discussion regarding the learner-centered movement, many in higher education

disappointingly acknowledge that there has been very little change of substance in regard to operating paradigms (Arum & Roksa, 2011; Lazerson et al., 2000; Barr, 1998, Innes, 2004; Bok, 2006, 2013; Shapiro, 2006). Barr (1998), for example, notes that at a conference for the American Association of Higher Education, the leaders of the association admitted that "on many campuses the rhetoric about learning and student-centeredness outpaces the reality" (p. 18). Several years later, after even more dialogue and research, The National Center for Postsecondary Improvement (2002) came to a similar conclusion of severe inaction in American higher education: "However natural it is to suppose that teaching should be informed by knowledge of how knowledge occurs, the principles seldom aligns with actual practice in higher education" (p. 13).

In light of evidence that highlights the many benefits of the learner-centered paradigm and the endorsement of many leaders and organizations in higher education, the slow pace of change presents an interesting issue for the academy. Research has revealed a number of common implementation barriers and this review will focus on barriers through the lenses of faculty and students at the institutional level and through the lens of the higher education system as a whole.

Faculty. It is often noted that college faculty members are most often attracted into the field of higher education because of their love of learning and the passion they have for sharing this learning with others (Huba & Freed, 2000; Amey, 1999; Palmer, 1998). As Huba and Freed (2000) note, and Michael (2007) confirmed in his research, most of the assumptions that faculty make about teaching are modeled after how they were taught themselves. Robert Barr (1998), whose work with colleague John Tagg is

often identified as one of the most seminal pieces on the learner-centered movement (Barr & Tagg, 1995), similarly noted that these obstacles are due to the fact that individual teachers practice what they know. As products of the instructor paradigm themselves, the assumptions and practices of this traditional paradigm are very difficult to break (Silverthorn, 2006). Recently, Hutchings et al. (2011) shared a powerful discussion they had with an experienced faculty member regarding his teaching, and his reflection clearly illustrates the modus operandi of many educators in higher education:

> For a decade I had had good success as a teacher: positive feedback, strong evaluations, evidence (anecdotal and otherwise) that students learned something in my courses. Yet, I now realized I knew very little about why certain students did better than others. Or, more generally, I knew very little about how students came to know the material I was teaching. Ever since graduate school I had taught mostly the way I had been taught, and tended to replicate the pedagogies that worked best—quite frankly—on me… (p. 32).

Consistent with the findings of researchers regarding teaching practices, the faculty member quoted above acknowledges that it was his own experience in education and his own learning style that shaped and influenced his beliefs about education, epistemology, and practice that inform the pedagogies that he now employs himself.

These tightly held tenets, scholars have found, influence the faculty member's ideas and philosophies regarding the role of the teacher in the classroom (Weimer, 2002; Harris & Cullen, 2010; Kember, 2009; Kember & Gow, 1994), the balance of power between instructor and students (Harris and Cullen, 2010; Blumberg, 2009; Weimer,

2002), issues of content coverage (Harris & Curren, 2010; Weimer, 2002; Michael & Modell, 2003; Felder & Brent, 1996), and the use of evaluation (Harris and Cullen, 2010; Weimer, 2002; Hansen & Stephens, 2000). Each of these ideas can lend themselves to paradigm change and to practices that are learner-centered or in a way that serves as a barrier to its adoption and transformational change.

Role of the teacher. In many ways, the role of the teacher in college classrooms has remained constant throughout the history of higher education and is very much consistent with the beliefs, ideas, and practices of the dominant instructor paradigm. In practice, the teacher in this paradigm, both literally and figuratively, is firmly planted at the center of the college classroom (Weimer, 2002). Responsible for, among many things, delivering lectures, facilitating discussions, summarizing important information, and solving problems, faculty in the center of the room are preserving their position as the all-knowing authority figure and sending important messages to their students about the distinct roles of teacher and student (Weimer, 2002). Placing the faculty member and teaching at the center of the classroom portrays the teacher and the practice of teaching as more important than the students and the equally significant task of learning (Weimer, 2002). As such, this view and related practice regarding the role of the teacher often serves as a significant barrier to the adoption of the learner-centered paradigm.

One of the most important attributes of the learner-centered paradigm is a reframing of the role that teachers play in the higher education classroom (Barr & Tagg, 1995; Weimer, 2002). Weimer (2002) identifies a variety of metaphors that capture the spirit of this new role but it was King (1993) who many feel captured it particularly well

(Harris & Cullen, 2010). In an article on the learner-centered paradigm, she suggests that learner-centered teaching can only happen when the faculty member moves "from the sage on the stage to the guide on the side." This metaphor captures the basic tenants of the learner-centered view of the role of the teacher who centers their practice on the goal of facilitating student learning and describes the attributes of a healthy relationship between students and teachers. Weimer (2002) particularly likes this image, positing that it reflects the nuances of the role of the teacher in the learner-centered paradigm. She makes the following point to her readers: "What is the role of the guide? Guides show people the way and sometimes they even go along, but guides do not make the trek for the traveler" (p. 77).

Though Freire (1993) suggests that teachers must become partners with students and Barr and Tagg (1995) note that this synergy produces "powerful results," Amey (1999) theorizes that environments that call for the collaboration of faculty and students often creates dissonance for teachers who have had longstanding ideas regarding the role of the teacher in the academic process. Weimer (2002) adds to these thoughts, positing that there are additional reasons as well. In her experience as a teacher and researcher, she has found that faculty generally like being in the middle, hesitant to give up center stage because being on the side is seemingly less important, relegating them to supporting actor status so to speak. This is likely the case, Barr (1998) opines, because university faculty see the role of teaching as telling, a part of their identity that is as internalized in them as their gender is.

Another explanation is that in many ways, teachers and students have become co-dependent on each other, comfortable with their well-established roles that are now very predictable and safe (Weimer, 2002). A facilitator role that requires that teachers carefully design learning experiences and that students critically draw meaning from them often requires more work for faculty and students alike, especially in light of the established systems and structures that are meant to support more traditional courses (Barr, 1998). With these challenges in mind, it is clear that ideas regarding the role of the teacher provides many reasons for creating barriers that are meant to preserve the status quo (Harris & Cullen, 2010).

Balance of power. Another barrier to the learner-centered paradigm is found in one of the most tightly held ideals for many college faculty members: their views on the role of power in the classroom (Weimer, 2002; Harris & Cullen, 2010). For many classroom faculty members, these ideals are strongly ingrained and there are near universal standards and images for what constitutes a "good class" (Harris & Cullen, 2010). In describing such a class and the individual that leads it, Braye (1995) writes that the traditional view of being a good teacher in the instructor paradigm means that he or she "…dominates the classroom and its elements. She prepares lesson plans for efficient use of class time, prescribes course objects, and disseminates information clearly and effectively so that students may learn it quickly, remember it well, and reproduce it upon demand" (as cited in Weimer, 2002, p. 25).

As a result of these ideals, Weimer (2002) has found, many teachers generally maintain strict controls over all of the power in the classroom. This power manifests

itself in a number of different ways and in the plethora of decisions that faculty make about their course, often without the benefit or forethought of critically thinking through the possible effect that they have on student learning (Blumberg, 2009). The pace of the course, the content that will be covered, the assessments that will be used, and the rules and policies that will guide the class, are a few examples of ways that faculty both overtly and subtly maintain their position of authority with their students and in the classroom (Weimer, 2002; Blumberg, 2009).

Often fearful that sharing power not only challenges their ideas and preconceptions over the role of the teacher but could lead to undisciplined and unmanageable classrooms, faculty often resist any suggestion for change (Michael, 2007; Weimer, 2002; Harris & Cullen, 2010). In addition, sharing power can result in feelings of being vulnerable for faculty, presenting opportunities for teachers to be challenged by students or to be asked a question that they do not know the answer to (Michael, 2007; Weimer, 2002).

Despite these hesitancies, however, scholars have noted that the balance of power in classrooms is an extremely important attribute of the learner-centered paradigm (Weimer, 2002; Harris & Cullen, 2010). This is so, scholars such as McKeachie (2002), Blumberg (2009), and Harris and Cullen (2010) explain, because when there is a balance of power between a teacher and a student, the motivation to learn for the latter begins to increase. Connecting this finding with those that have been extrapolated in the field of psychology, McKeachie (2002) notes that, “Most individuals want to be in charge of their own behavior and value a sense of control over their environment. We can enhance

students' sense of control by offering choices and supporting their autonomy, which in turn enhances motivation" (p. 119). Redistributing power in the classroom is one way that this can be done. Failure to do so, however, serves as a significant barrier to the learner-centered paradigm.

Content coverage. Strong and unwavering commitment to content is another substantial barrier to learner-centered teaching (Michael & Modell, 2003; Weimer, 2002; Harris & Cullen, 2010; Hora, 2012). First introduced in graduate schools to most aspiring academics, allegiance to content is deeply ingrained in the professional fabric of many college and university faculty. This commitment results in efforts to cover the assigned content of their class by spending more time and effort determining what needs to be covered rather than what their students need to know (Harris & Cullen, 2010; Blumberg, 2009). It is also, Weimer (2002) posits, based on traditional assumptions in higher education that associates more content with more rigor, more rigor with more difficulty, and more difficulty with more academic.

With these assumptions so prevalent in the philosophies and practices of many college and university teachers, Felder and Brent (1996) have found that this results in most classes being nothing more than a frantic race to transmit the most information as possible in the allotted time period. While this certainly accomplishes the task of disseminating voluminous amounts of information, it is more closely aligned with Freire's (2003) banking model than a sound learner-centered practice. It does not, Felder and Brent (1996) argue, accomplish much teaching or much learning and in many classrooms, the students role is reduced to that of stenographers: "Teachers recite their

course notes; students do their best to transcribe them, and the information does not pass through anyone's brains" (p. 44). This race through course content restricts the use of learner-centered strategies that encourage active learning and thus deeper learning (Tagg, 2003). Instead, the passiveness that this race through the content encourages forces students into employing surface learning strategies such as memorization and results in surface knowledge that is likely to be soon forgotten following the next examination (Weimer, 2002; Tagg, 2003).

Use of evaluation. Measuring student learning is an important task that has too often, researchers note, been ignored. Traditional practice in the instructor paradigm certainly required assessment but it is often facilitated through the use of standard quizzes, examinations, and term papers. These methods, researchers have found, often only test the students' ability to remember specific information that was often memorized solely for short-term recall and testing purposes (Hansen & Stephens, 2000; Bok, 2005, 2006, 2013). It does not, however, assess the amount of learning that had taken place, how much the student now knows, or how they make sense of this information and connect it with what they are learning or have learned in other contexts.

Lazerson et al. (2000) credit K. Patricia Cross as being one of the most noteworthy and influential scholars in regard to classroom assessment. Concerned that many faculty were unable to assess their students learning, Cross suggested a number of techniques that faculty could employ in their classrooms on an ongoing basis. One of these strategies included the use of a one-minute paper to gauge students' understanding and questions, an exercise that asks students to respond to two brief prompts: What was

the big point you learned in class today and what is the main unanswered questions you leave class with today (Pascarella & Terenzini, 2005)? When completed at the end of a class period, these questions require that students connect individual lessons with the goals of the course, fostering learning through engaging them in the discussion (Lazerson et al., 2000). It also allows faculty members to get immediate feedback about their students' learning, providing them with opportunities to identify when students are ready to progress on to new topics or when more time is needed to help students better understand the concepts or ideas being discussed (Barr & Tagg, 1995; Pascarella & Terenzini, 2005).

Lazerson et al. (2000) posits that simple techniques such as the one minute paper in concert with other assessment tools fosters learning and critical thinking more than the sole use of traditional examinations or term papers. Too often, these latter forms of assessment require neither deeper learning nor critical thinking (Haas & Keeley, 1998; Bok, 2006, 2013). Research supports this assertion and Haas and Keeley (1998) report on the results of a study conducted by Braxton and Nordvall (1985) as an example. After reviewing examinations in 83 colleges, these researchers found that only .5 percent of questions required any form of evaluation, an important part, Haas and Keeley (1998) note, of critical thinking.

Unlike assessment in the instructor-centered paradigm that is often only conducted at the conclusion of a unit or at the end of the semester for purposes to assigning grades, assessment in the learner-centered paradigm takes on a different meaning and purpose (Blumberg, 2009). Meant to measure learning and help teachers

ascertain how much is being learned, assessment in the learner-centered paradigm is conducted earlier and much more frequently (Blumberg, 2009). With these results, students will be able to be the beneficiaries of constant feedback from instructors, an important element of learner-centered learning environments (Bransford, 2000).

Students. Much of the literature on the learner-centered paradigm is often written with an emphasis on the role of classroom faculty and thus much of what is discussed about barriers often follows suit. However, as several researchers have revealed, students too are often the creators of significant barriers to the adoption of the learner-centered paradigm (Doyle, 2008; Weimer, 2002; Felder & Brent, 1996; Hansen & Stephens, 2000; Michael, 2007; Blumberg, 2009).

Similar to their own faculty members, students have spent a majority of their academic career becoming assimilated to a system that has most often exclusively been instructor-centered (Felder & Brent, 1996; Hansen & Stephens, 2000). This orientation started early in their elementary career and continued through to their experiences in many, if not all, of their college or university classes (Hansen & Stephens, 2000). As such, a paradigm shift from one that is instructor-centered to one that is learner-centered is equally confusing for them too as it challenges their own experiences and assumptions about what education is, what it looks like, how faculty contribute, what their role in it is, and how it should be delivered (Barkley et al., 2005; Silverthorn, 2006; Michael, 2007).

Even as educators dedicated to learner-centered teaching, Weimer (2002), Felder and Brent (1996), and Silverthorn (1996), discovered that students would often initially resist their attempts to create a learner-centered environment, displaying that practice in

this paradigm is often interpreted as being incompatible with their well-established habits and expectations. An example of this is provided by Barkley et al. (2005) who write that one common action by students who are not used to active or collaborative learning exercises is to insist that they learn better alone than they do learning with others.

Additional explanations for student barriers have been examined in the literature and these conceptual and empirical pieces suggest that resistance to the learner-centered paradigm is caused by a variety of factors (Weimer, 2002; Mentkowski & Associates, 2000). On one hand, being a student in a learner-centered class often is more work and more challenging than those that are more traditional in delivery and expectations (Weimer, 2002; Mentkowski & Associates, 2000; Gabelnick, MacGregor, Matthews, & Smith, 1990). Additionally, the literature also reveals that a change in paradigm and practices can appear to be quite threatening to students (Weimer, 2002; Mentkowski & Associates, 2000; Gabelnick et al., 1990) and even manifest itself in feelings of loss for them as well (Weimer, 2002).

Higher education system and organizations. The higher education system itself, and the individual institutions that make it up, has also been addressed by researchers through a variety of descriptive and empirical studies. As Tagg (2003), Harris and Cullen (2010), and Weimer (2002) have found, the instructor-centered paradigm and higher education structures often support each other, hindering any paradigm change. These mutually supporting barriers include a number of structural issues such as the university calendar (O'Banion, 1997; Tagg, 2003; Michael, 2007), academic credit hours (Tagg, 2003; Ehrlich, 2003), physical classroom space and location of a podium or inflexibility

of seating (Harris and Cullen, 2010; Tagg, 2003; Michael, 2007; Hora, 2012), lack of administrative support (Weimer, 2002), little to no faculty training (Weimer, 2002; Haas & Keeley, 1998), and a variety of organizational factors (Tagg, 2003; Hora, 2012). Philosophical barriers include the prevailing view of epistemology and scholarship in the academy (Boyer, 1990; Schon, 1995; Hutchings et al., 2010).

University calendar and the academic credit hour. A nearly universal aspect of higher education from community colleges to four year universities is the university calendar and the academic credit hour (O'Banion, 1997; Tagg, 2003). Dubbed as "atomistic" by Barr and Tagg (1995) with the 50-minute lecture as the atom and the three credit course as the molecule, these two attributes set the structure for nearly the entire higher education system. Based on schedules created for an agrarian economy and congruent with the instructor paradigm, O'Banion (1997) notes that the academic calendar assumes that learning is time bound, that all classes are alike, and that required learning takes place in semester or quarter hour blocks (Tagg, 2003).

Likewise, for audiences both internal and external to higher education, the academic credit hour is often interpreted to be a metric of learning, providing a common measurement that can be more easily utilized and understood by faculty and administrators across the various levels of higher education (Ehrlich, 2003; Wellman & Ehrlich, 2003; Barr, 1998). Wellman & Ehrlich (2003) have found that the academic credit hour often serves as public currency, signaling to others that some type of learning has taken place when credit has been earned.

Despite its long-standing historical use and seemingly established credibility, Wellman and Ehrlich (2003) posit that the credit hour has not only failed to measure learning but that it perpetuates poor habits in the academy by associating education with the number of credits completed and not the amount of learning that has taken place. For example, Barr and Tagg (1995) note, that in this environment, "A 'college education' is the sum the student's experience of a series of discrete, largely unrelated, three-credit classes" (p. 56).

Furthermore, there is evidence in the literature to suggest that the academic credit hour is tightly aligned with the instructor paradigm and often serves as a barrier to the learner-centered paradigm and its practices (Michael, 2007; Tagg, 2003; Barr & Tagg, 1995; Ehrlich, 2003; Barr, 1998). For example, in his study on the potential of the credit hour being a barrier to pedagogical innovation, Ehrlich (2003) researched the experience of eleven institutions that had gained recognition for institutional change in regards to learning. He found that credit hours did limit innovation even though there were some institutions that we able to work around it over time. This is congruent with the findings of Michael (2007) who discovered that faculty identified class periods as being a significant barrier to their implementation of learner-centered practices.

Physical classroom space. Harris and Cullen (2010) and Lei (2010) posit that physical space has an effect on learning, noting that the set-up of a classroom can alter the communication flow, limiting it most often between teachers and students. Most frequently the communication that this arrangement comfortably allows flows in one direction, from the faculty member to the student. Additionally, the physical set-up,

sometimes in fixed seating arrangements, limits the interaction between and among students, making any kind of academic dialogue or group work nearly impossible. It is not surprising then that faculty identified class space as being a barrier to introducing learner-centered techniques into their teaching (Michael, 2007; Hora, 2012).

Physical space also sends important messages about power and control, feeding the imbalance of power between teachers and students that is the hallmark of instructor-centered practice. Tagg (2003) believes that the classroom space is set up in a way that is meant to be filled by an instructor, feeding what Barr (1998) describes as the need for faculty to tell.

When allowed to be manipulated in ways that provide for learner-centered practices, the classroom is rearranged to create spaces that allow for collaboration between faculty and students. In fact, in practice, Silverthorn (2006) describes how important the physical arrangement in his interactive classroom is: "I teach in classrooms where the students can work comfortably with others around them…I usually roam the lecture hall, coming face to face with all the students…there is no place to hide, and everyone becomes accountable" (p. 137).

Organizational factors. Research shows that a variety of organizational factors influence faculty decisions about teaching in higher education (Hora, 2012) and too often, scholars such as Palmer (1998) and Tagg (2003) note, these factors act as significant barriers to learner-centered teaching. In fact, Palmer (1998) shares that no matter how excited the faculty he works with are about reforming their teaching, they eventually express disbelief that meaningful change can happen. As he explains: "No matter how

hopeful our dialogue has been, no matter how many of our colleagues have embraced a new vision…someone will say, 'These are wonderful ideas, but every last one of them will be defeated by the conditions in my school'" (p. 163).

Hora's (2012) recently published case study presents interesting findings regarding the perception faculty have of organizational factors that affect their decisions about teaching practices. Utilizing a conceptual framework informed by the literature on teacher cognition and naturalistic decision-making, Hora (2012) created a research design that included the use of semi-structured interviews of 22 tenure track faculty at one research university. These interviews revealed 48 different organizational factors that faculty found to be related to teaching and he classified them as either structural or socio-cultural. The former included factors such as institutional type, governance, department budgets, and personnel policies while the latter included the views of colleagues, disciplinary identity and social hierarchy. When combined with 13 identified individual factors such as personality, training, and research activity, Hora (2012) confirmed how complex decisions about teaching can be and discovered more information about organizational barriers to teaching in general. Chief among the barriers that emerged were department level influences and organizational factors that communicated the importance of research over teaching.

Epistemology and scholarship. In addition to these structural complications, additional barriers exist in regards to established philosophies regarding epistemology, what constitutes scholarship (Boyer, 1990; Schon, 1995; Hutchings et al., 2011), and related promotion and tenure guidelines (Hora, 2012; Shapiro, 2006; Lazerson, et al.,

2000). Understanding these barriers is critically important because while teaching and learning is an important mission of higher education, Lynton (1994) reminds readers that knowledge creation is a crucial part as well. This is especially true in the modern era of higher education as both Boyer (1987) and Lynton (1994) note that research production has started to dominate the agendas of most institutions. As such, Boyer (1987, 1990) strongly advocated for an expanded definition of what scholarship is and he suggests that this includes the scholarship of discovery, the scholarship of integration, the scholarship of application, and the scholarship of teaching. Each of these is rooted in an epistemological framework that views knowledge as constructed. In this view, students have knowledge and experience that they bring to the educational setting and are co-constructors of knowledge in the teaching and learning process. This same framing has implications for scholarship as well as the generation of knowledge through research.

As Schon (1995) notes, if higher education is to accept the changes to scholarship that both Boyer and Lynton advocate for, this new epistemology will need to be fully adopted and each of these areas of scholarship must be fully recognized and equally valued in matters of promotion and tenure (Boyer, 1990; Shapiro, 2006; Hutchings, et al., 2011). Failure to do so, Shapiro (2006) predicts, will negate any meaningful shift from teaching to learning.

Change in Higher Education

A full-scale transition from an instructor-centered paradigm to a learner-centered paradigm requires a deeper understanding of organizational change in higher education. The type of change that an effort like this requires will be nearly impossible if institutions

are unable or unwilling to undergo the difficult work that change entails. The effort, though, is an important one. As Kanter, Stein, and Jick (1992) note of modern organizations, it is not a question of whether organizations will change but rather when and in which direction.

There are many ways to better understand change in a higher education context and there is a plethora of literature that expands this knowledge. For example, Roland (2004) describes change at both slow moving and fast moving institutions, MacTaggart (2007) leads readers through examples of successful academic turnarounds, and Bess and Dee (2008) provide educational leaders with a deeper understanding of change in higher education with a comprehensive discussion regarding the most common change models in the academy and the theory behind each of them.

Change in higher education is constantly happening throughout institutions in higher education on a number of different organizational levels (Rowley & Sherman, 2001) and can generally be defined as incremental or transformational (Bess & Dee, 2008). Transformational changes have a large-scale effect on an organization including adjustments to strategy and structure while incremental changes are smaller scale, long term changes (Bess and Dee, 2008).

What becomes clear after analyzing the literature, however, is that initiating comprehensive change in higher education is no easy task (Eckel, Green, Hill, & Mallon, 1999; Rowley & Sherman, 2001; Tagg, 2003; Bess & Dee, 2008). In their well-known research, Eckel, Hill, and Green (1998) critically examined significant change initiatives that were funded by the Kellogg Foundation. Despite the fact that these change efforts

had sufficient finances and necessary administrative support, the scholars found that little transformative change took place. Bess and Dee (2008) report that in follow-up research on the 26 institutions that were part of the study, only six of these institutions were successful in transforming at the end of the project and only three of these were still transforming four years later.

Literature reveals that the failure to succeed in transformational change is often due to the fact that most institutions in higher education are large, complex organizations with their own unique organizational cultures (Smart & Hamm, 1993; Eckel et al., 1998; Rowley & Sherman, 2001; Kezar & Eckel, 2002a, 2002b; Beach, 2006; Bess & Dee, 2008). Kezar & Eckel's (2002a) five and a half year empirical research study of five institutions undergoing large scale change processes to transform teaching and learning revealed that there was an important connection between culture and change. They found that based on the unique culture that each institution espoused, "each campus enacted strategies in different ways" (p. 456). This uniqueness, then, renders generalization quite difficult and previous research that has resulted in broad strategic recommendations is often meaningless to educational leaders (Kezar & Eckel, 2002a).

If there are few, if any, universal strategies that would work across all institutions (Kezar & Eckel, 2002b), higher education must become knowledgeable about the organizational and faculty culture at their institution and spend time learning how to change (Rowley & Sherman, 2001; Tagg, 2003). Learning how to change is a crucial aspect to transitioning to the learner-centered paradigm and Tagg (2003) suggests that institutions, like students, need scaffolding to be able to do so. As he describes it, the

purpose of scaffolding "is to facilitate institutional learning, to help those of us who work at the college to learn more about our work, to help us to see the college through the lens of the learning paradigm, and to bring about fundamental structural change that will create a hot cognitive economy for undergraduate learners" (p. 322).

In his work and through his research, Tagg (2003) has been able to identify one important practice that institutions progressing toward transformational change have adopted. In each of the cases he has observed, successful universities have created structures and processes that removed education and learning out of the individual classrooms and thrust it into the open. Instead of relying solely on faculty working in isolation to be responsible for learning, they have brought the entire campus community together. Faculty and staff, for example, are invited to create communities of practice with the goal, he notes, to "negotiate as a group the terms and means of student learning" (p. 324). This collaboration, Eckel et al. (1999) express, is important in any large-scale change effort and Levine and Yanni (2010) discovered that faculty members working together to improve learning at Rutgers University was extremely important in facilitating institutional change on their campus.

A common feature of many change theories is the role that leaders play in the process and scholars such as Kanter (2000), Astin and Astin (2000), Rowley and Sherman (2001), Tagg (2003), and Harris and Cullen (2008, 2010) all note the importance that leaders play in the change process as well. Heifetz (1994) recommends that leaders can better understand their organizations by removing themselves from the day-to-day operations of their organizations and taking a view from the balcony. This

new view reveals the many nuances that exist in complex organizations, allowing change agents an opportunity to identify the many cultures that exist. This provides for more comprehensive and effective change efforts to be implemented and for the college or university to become a learning organization where, according to Senge (1990), "…new and expansive patterns of thinking are nurtured…and where people are continually learning how to learn together" (p. 4). This is important because, as several scholars have pointed out, transitioning to the learner-centered paradigm requires learning a whole new way to look at education and a reframing of the relationship between teaching and learning. Both Harris and Cullen (2010) and Tagg (2003) liken this to learning an entirely new language.

As Harris and Cullen (2010) write in the conclusion of their book on leading the learner-centered campus, institutions cannot change if the people within them do not either. As they note, "Leaders of this change will be challenged to inspire, to foster hope, anticipation, and excitement over the prospect of the birth of a new paradigm" (p. 172). This cannot be fostered, however, with rhetoric alone (Ewell, 1997). The history of higher education is full of meaningful change efforts that were supported by strong empirical evidence yet were often championed by small special interests on campus and doomed to fail. As Ewell (1997) laments, this failure is a result of change efforts working against the current organizational structures and incentives. Therefore, the barriers addressed earlier must be addressed and institutional systems and processes must be adapted to fully support them (Harris & Cullen, 2007; Ewell, 1997).

Implications of the Literature

In the 1980's, Ernest Boyer (1987) did not mince words when he acknowledged that the state of the higher education system was best described as a "troubled institution." His detailed research of undergraduate education during his career revealed a startling number of serious issues facing higher education. Joined by a number of scholars past and present, there is evidence to suggest that the dominant paradigm in higher education and the pedagogical practices that complement it may not be aligned with the way most students learn.

Literature on learner-centered practices in concert with research regarding the science of learning suggests that there are better ways to educate students than the instructor-centered methods that dominate the academy. This can be accomplished by focusing more on what and how students are learning rather than how they are being taught. Active and collaborative learning, high-impact practices, and engaged learning are strategies that reframe the role of the instructor and create opportunities for deeper learning for students.

Though research supports the adoption of the learner-centered paradigm and studies consistently reveal that there are many meaningful impacts and outcomes for students, adoption of the learner-centered paradigm has largely failed to take place. While a minority of faculty have adopted some related strategies and pedagogies, a detailed analysis of the literature reveals that too many barriers still exist. Faculty, students, and the higher education systems and structures themselves have successfully prevented any serious change.

Literature on change in higher education sheds some light into the complexities of transformational change and the added difficulty of these movements in higher education organizations. Scholars agree that for transformational change to take place in the academy, it will require the efforts of all stakeholders in the institution to learn how to change. Becoming a learning organization is a natural fit for higher education and an inclusive process, guided by transformational leaders, could facilitate more meaningful change.

CHAPTER 3

METHODOLOGY

The process of better understanding the organizational structures and policies that support the implementation of learner-centered teaching and learning practices has revealed a number of compelling research questions. With careful consideration of these emerging questions and critical reflection on the many complexities that this topic presents, a more intentional process of designing a research study has started to emerge more fully. Proceeding incrementally and heeding advice set forth by Maxwell (2005) to allow the research study to emerge over time, the research design for this study has developed organically.

Research Paradigm

Creswell (2007; 2009) notes that the choice of research design is the result of a number of important considerations that includes the philosophical assumptions of the researcher, established inquiry strategies, and the implementation of certain methods. Referred to in a number of different ways by academics, Creswell (2007) posits that five philosophical assumptions; ontology, epistemology, axiology, rhetorical, and methodological guide the research process and will often result in the use of either a quantitative, qualitative, or mixed methods approach.

Though it is rare for researchers to explicitly state their philosophical views and assumptions, Creswell (2009) suggests that addressing these philosophies will help the researcher explain the rationale that guided the chosen methodology. As such, the beliefs that guided this research study is congruent with a social constructivist worldview (Creswell, 2009).

Constructivists hold that knowledge is not necessarily discovered but that it is socially constructed by individuals as they make sense of the world around them and their experiences in it (Stake, 1995). They believe that there are multiple realities (Denzin & Lincoln, 2011) and that knowledge is often based on meanings individuals assign to what they see based on their lived norms, which are influenced by one's own personal history and culture (Creswell, 2009). This philosophy, the literature reveals in chapter two, is also the premise of the learner-centered paradigm and the practices most congruent with it (Mentkowski & Associates, 2000; King, 1993; Cross, 1999).

Similar to learner-centered methods, empirical research that is congruent with this philosophy is often broad and open ended, seeking out and relying on the diverse views, experiences, and sense making of participants who have experienced the phenomenon that is being studied (Creswell, 2007, 2009). Unlike research based on other paradigms such as positivist, that seek to find a discoverable truth, fact, or universal understanding, studies in the constructivist tradition, Stake (1995) notes, try to better understand the particular.

A more complex understanding of the questions posed for this research study required that the experiences of faculty who have been successful in creating a practice

focused on learner-centered teaching and learning be carefully considered. What explicit factors and policies do they feel provided the support necessary to create and practice learner-centered pedagogies? How they made sense of their institution, the explicit and implicit policies that are practiced there, and the structures that they view as either supportive or limiting, is an important contribution that extends what has been researched in regards to practice in the learner-centered paradigm.

The questions posed for this study are focused on the understanding and interpretation that faculty members have regarding the institutionalization of the learner-centered paradigm, suggesting that this study provides for what Creswell (2007) describes as a "…complex, detailed understanding of the issues" (p. 40). Such a task, Merriman (1991) posits, requires a qualitative approach rather than the experimental inquiry that is commonly the hallmark of quantitative studies.

According to Creswell (2007), while quantitative methods can be helpful in looking at large scale statistical averages, quantitative measures are unable to appreciate the uniqueness of individuals and are not able to capture or understand interactions between people. Why, for example, have the participants responded in the way they did? How do they make sense of what they experienced? What are some of their deeper thoughts? Each of these questions readily acknowledges that each individual experiences a particular phenomenon in different and unique ways, that context matters (Denzin & Lincoln, 2005). Having a deeper understanding of context and its related complexity, then, required a qualitative research study.

Qualitative inquiry is characterized by a number of different practices, though academics note that the most distinguishing factor between the two traditions is that qualitative studies take place in the natural setting (Denzin & Lincoln, 2005; Creswell, 2007). As such, researchers conducting qualitative studies collect their data in the field, with the participants and at the very places where they experience the issue being studied (Stake, 1995). This is done in a way that requires that the researcher be the main instrument, utilizing a number of varied sources to learn more about the questions being examined (Maxwell, 2005; Marshall & Rossman, 2006; Creswell, 2007). This includes research activities such as carefully reviewing documents, taking time to observe behavior, and participating in interviews with the participants (Patton, 2005; Creswell, 2007, 2009).

The rich data that emerge through these practices provides the researcher with a better understanding of the meanings that participants have about the subject by requiring that the qualitative researcher analyze the data by identifying emerging patterns, creating categories, and, as Creswell (2007) notes, building themes from the bottom up. This includes working with the participants and sharing findings with them to solicit their feedback for additional understanding and clarification (Patton, 2005).

Strategy of Inquiry

Though many institutions claim to support learner-centered teaching, the literature reviewed in chapter two reveals that this is seldom the case. While there are isolated examples on many campuses of individual faculty members who have embraced the learner-centered paradigm shift, larger wide scale adoption has been rare. Therefore,

careful exploration of an academic department, college, or university campus where the learner-centered paradigm is successfully implemented is particularly important for advancing the understanding how various organizational attributes are interpreted by faculty in a way that allow for this transformative practice to fully emerge. As such, the qualitative methodology for this research is case study.

Case study research is a qualitative method with a long history in the social sciences and has been particularly popular in disciplines such as psychology, sociology, anthropology, history, and political science (Creswell, 2007; Yin, 2003). In fact, Flyvbjerg (2011) notes, because case study has been around since the start of recorded history, "Much of what we know about the empirical world has been produced by case study research, and many of the most treasured classics in each discipline are case studies" (p. 302). More recently, case studies have started to frequently be used in applied academic fields such as education and Merriam (1998) posits that this strategy of inquiry is extremely effective when studying educational innovations.

Congruent with a constructivist world view, case studies do not seek to discover an external truth but to have a deeper, more meaningful understanding of the phenomenon and a more complex understanding of the linkages between the causes and the outcomes (Flyvbjerg, 2011). This requires a thoughtful examination and appreciation for the realities of certain situations based on the version of reality as experienced by different individuals (Stake, 1995). It is particularly valuable for conducting exploratory research (Gerring, 2007; Yin, 2003) such as what was conducted here since these questions had not yet been fully examined in previous empirical studies. As Hora (2012)

discovered in his recent study on faculty instructional decision-making, there is not much known about the subtle processes that individuals use to interpret the organizational environment in which they are a part of and how this influences their teaching decisions.

Yin (2003) advocates utilizing the case study method, "…because you wanted to understand a real-life phenomenon in depth, but such understanding encompassed important contextual conditions…" (p. 18). This is especially important in higher education where most institutions are large, complex organizations with their own unique organizational culture that supports and nurtures different expectations and ways of doing things (Eckel et al., 1998). Therefore, addressing the research questions posed here required sitting down with participants and critically listening to their voices as they described and made sense of their environments seen through their own unique lenses.

Case studies differ from other research strategies in that it involves the study of an issue through a case (or cases) within a bounded system (Stake, 1995; Creswell, 2007; 2009), anchored, Merriam (1998) notes, in real-life situations. This exploration, Creswell (2007) and Yin (2003) have found, takes place over a period of time and involves the collection and use of many sources of information including interviews, observations, audiovisual materials, participant-observations, archival materials, and other documents and artifacts.

In his well-known book on case study research, Stake (1995) describes case studies as being either intrinsic or instrumental. Intrinsic case studies involve cases where there is a particular problem that must be addressed using a specific case. Often, "The case is given. We are interested in it, not because by studying it we learn about

other cases or about some general problem, but because we need to learn about that particular case" (Stake, 1995, p. 3). In other case studies, such as the one conducted here, the case study is an instrumental one. Based on research questions and faced with the desire for general understanding into a complex issue, instrumental studies seek greater understanding of a phenomenon by studying a case in order to better understand something else.

Case study research provides for designs that can be single-case or multiple-case (Yin, 2003). Single cases, Yin (2003, 2009) writes, often are utilized when a case is critical to testing a theory, when it represents a particularly unique case, when it is representative or a typical case, when it is a revelatory case, or if the case is a longitudinal one. This takes place when the same case is studied repeatedly over a longer period of time. Multiple case studies, on the other hand, utilize multiple cases to compare and contrast the phenomenon among different cases, often, Yin (2003) notes, in an effort to satisfy replication logic.

Yin (2009) strongly suggests that researchers consider multiple case studies whenever possible. As he describes it, "Even if you can do a "two-case" case study, your chances of doing a good case study will be better than using a single-case design" (p 60). Although finding multiple sites that had fully adopted the learner-centered paradigm was difficult, the multiple case study completed here is congruent with the advice that Yin (2009) offers.

One of the most meaningful advantages of case study research is the holistic and deep level of analysis that is required of this practice (Gerring, 2007). Through the use of

narrative and “thick description,” and consistent with a constructivist foundation that underpins this approach, case studies provide readers with enough information and data that they will be able to extrapolate their own thoughts and theories regarding the case (Stake, 1995).

Research Design

The purpose of this research study was to understand how faculty implementation of learner-centered teaching and learning practices is influenced by organizational structures and policies. To facilitate this, this study was comprised of four components: a) site selection, b) participant selection, c) data collection, and d) data analysis and synthesis. A description of each of these four components is included in this section.

Selection of sites. Though many institutions in higher education extol the virtues of learner-centered teaching practices, the literature reveals that there are few examples of institutions that have fully embraced the paradigm in any meaningful way (Barr, 1998; The National Center for Postsecondary Improvement, 2002). Though this made site selection challenging, literature describing the SCALE-UP project that originated at North Carolina State University, identified a number of institutions that have started to adopt learner-centered practices in one or more of their schools or colleges (Beichner et al., 2007).

The SCALE-UP project, which first stood for Student-Centered Activities for Large Enrollment Undergraduate Programs, emerged at North Carolina State University (NC State) as a result of their exploration of initiatives that would improve student learning in mathematics, physics, engineering, and chemistry (Beichner et al., 2007).

While other institutions were developing new methods to engage students and improve learning, such as the Workshop Physics program created at Dickinson College, experimental attempts at NC State to duplicate these programs had mixed results (Beichner et al., 1999; Beichner et al., 2007). A one-year experiment, for example, that integrated the above classes in a sequence of hands-on studio courses was successful in meeting student learning outcomes (Beichner et al., 1999) but was deemed unrealistic due to the extremely small class size that was required (Beichner et al., 2007). As Beichner et al. (2007) describe it, even though the program was successful in "…minimizing attrition, improving student understanding of the course material and providing a positive learning experience for 36 students per year…" (p. 4), the fact that it only served a tiny fraction of their student population deemed full adoption of this program unreasonable.

As a result, the SCALE-UP project was created to see if implementation of learner-centered practices could be "scaled up" to accommodate larger class sections at large universities (Beichner et al., 1999; Beichner et al., 2007; Gardner, 2013). The pedagogy that guides this project, Beichner et al. (2007) explains, has three main components:

- To create a cooperative learning environment that encourages students to collaborate with their peers, questioning and teaching one another.
- To use Physics Education Research (PER)-based activities as much as possible and to minimize lecture during class.
- To coach the students during activities by assisting them in answering their own questions and by letting students present their results to the class for

> review by instructors and peers as opposed to just telling students the answer (p. 5)

In this environment, the classroom is being flipped in ways that allows faculty to, as José Bowen (2012) famously described it, teach naked and get out from behind the podium to interact directly with the students. In a SCALE-UP class, students are introduced to the material on their own using their textbooks, online readings, and quizzes to become acquainted with the material prior to class so that they can participate in meaningful and higher order educational experiences dubbed ponderable or tangible activities (Gaffney, Richards, Kustusch, Ding, & Beichner, 2008; Beichner et al., 2007). This flip allows the amount of lecture of be minimized for a brief introduction to a topic or to provide additional context, explanation, or clarification as necessary (Beichner et al., 2007; Benson et al., 2007; Bailey, Kingsbury, Kulinowski, Paradis, & Schoonover, 2000). The physical space too is significantly re-designed to encourage student to student interaction and technology is leveraged in a way that allows students and faculty to work collaboratively within and between groups as they seek to solve problems and apply or create knowledge (Bailey et al., 2000; Gaffney et al., 2008; Beichner et al, 2007; Gardner, 2013).

Successfully teaching in a SCALE-UP classroom requires that faculty embrace a learner-centered approach and redefines the role of the teacher, the content that is covered, and the way that learning is evaluated. As Beichner et al. (2007) have found, congruent with the literature, “the instructor is more of a coach or a guide rather than the source of knowledge” (p. 28).

Though still emerging, empirical research studies being completed on SCALE-UP initiatives across the country have found that there are many positive learning outcomes for students who are able to learn in a SCALE-UP related class (Whiteside, Brooks, & Walker, 2010; Benson et al., 2007; Dori, Hult, Breslow, & Belcher, 2007; Dori & Belcher, 2005). At the Massachusetts Institute of Technology (MIT), for example, the SCALE-UP project there is referred to as TEAL, Technology-Enabled Active Learning (Dori et al., 2007; Beichner et al, 2007; Dori & Belcher, 2005). In the first study to explore the outcomes of TEAL at MIT, Dori and Belcher (2005) sorted 811 students taking a first-year course in electromagnetism into small and large experimental groups as well as a control group. What they found was that students who studied in the learner-centered TEAL environment had a significantly deeper conceptual understanding of the subject matter when compared with their peers who participated in traditional lecture style classes (Dori & Belcher, 2005). Eighteen months later, Dori et al. (2007) studied the long term retention of these same students' learning and discovered that students who participated in the learner-centered environment significantly retained more course concepts than their peers as well. Additional studies summarized by Beichner et al. (2007) and that have included thousands of students have shown greater problem solving ability, improved student attitudes, higher class attendance, and greatly reduced failure rates for all students, but particularly for woman and underrepresented students.

As the SCALE-UP program continues to expand beyond NC State with colleges and universities of all sizes becoming SCALE-UP adopters, the name now stands for Student-Centered Active Learning Environment with Upside-Down Pedagogies. In fact,

there are currently over 250 colleges and universities around the world that have adopted the SCALE-UP program though many have customized it to fit the specific needs and unique cultures of their campuses (Beichner et al, 2007). Adopters range from large public institutions such as NC State or the Universities of Central Florida, Iowa, and Oklahoma and large private institutions such as MIT to smaller schools such as American University.

With so many potential sites to study, this case study explored the adoption of learner-centered teaching at two distinct and carefully chosen sites which have been given pseudonyms to maintain confidentiality: The University of the Midwest and East Coast State University. Each institution was chosen for the unique manner in which each has implemented SCALE-UP. At the University of the Midwest (UMW), the use of SCALE-UP has expanded greatly and it is estimated that nearly 1/3 of all students have taken a SCALE-UP class in a newly constructed building that now has twenty SCALE-UP classrooms. Similarly, the SCALE-UP project identified East Coast State University (ECSU) as an institution that has also adopted the SCALE-UP model. Though still in the early stages of paradigm change, ECSU has recently unveiled a new building with a number of SCALE-UP classrooms and they have had success in offering active learning classes outside of the traditional science and engineering disciplines.

Both of these institutions had also researched and published findings on the educational outcomes of their SCALE-UP initiatives. These findings have validated the positive outcomes that are associated with SCALE-UP and provided the perfect campus environments to initiate this research.

Participant selection. Contrary to strategies such as random sampling which is often found in quantitative studies, Creswell (2009) suggests that qualitative researchers must be purposeful in their selection, carefully seeking out those who would best be able to provide important insights into the issue being studied. Gaining a better understanding of the research questions that are guiding this study required that participants were purposefully selected and both the literature and the conceptual framework provided direction on which participants should be included (Marshall & Rossman, 2006). Purposeful selection, Maxwell (2005) writes, often supports four possible goals in research. It can capture representativeness, can provide for the chance to capture heterogeneity, it can support theories guiding the research, and can provide useful comparisons.

While the research sites studied here provided for a perfectly bounded case study for the research questions that supported this study, Marshall and Rossman (2006) caution researchers that even the most flawlessly conceived research study will not be realized if access to the site is not possible. As such, one of my first tasks was to identify and seek approval of individuals that scholars refer to as gatekeepers (Creswell, 2009; Marshall & Rossman, 2006; Maxwell, 2005) at the two campuses. In possession of both formal and informal influence and power, these gatekeepers were individuals who are empowered to allow the researcher access to a site and were able to provide guidance and advice about navigating the institution (Maxwell, 2005; Marshall & Rossman, 2006). Dr. Robert Beichner at North Carolina State maintains a comprehensive SCALE-UP website and encourages interested individuals to contact him. I did so and exchanged several

emails. He was particularly helpful in identifying the two institutions studied here and the website he gave me access to, provided the names and contact information for leaders at those institutions who I was able to contact.

Marshall and Rossman (2006) suggest that successful negotiation of entry can be obtained when qualitative researchers are themselves, when they are open, honest, and transparent about their interests. Acknowledging that a researcher's curiosity and energy can be "…infectious and quite useful for gaining access" (p. 74), I sought to authentically articulate my passion for this topic to those who I identified as being able to provide access. My efforts, however, did not end there. Even after access was granted, Maxwell (2005) cautions researchers to remember that these relationships often do not cease the moment that access is provided. Instead, relationships with gatekeepers and participants must continue to be nurtured. As he notes, "...not only does it typically require ongoing negotiation and renegotiation of your relationships…but it rarely involves any approximation of total access…what you need are relationships that allow you to ethically gain the information that can answer your research questions" (p. 82).

Gaining access to and having an opportunity to speak with those on campus who were most likely to yield the most pertinent data was extremely important and several strategies were employed to identify these individuals. This research study included the participation of several distinct groups of professionals on the case study campuses. In her article on the learner-centered changes taking place at the University of Alabama, Bonner (2010) notes that the transformation of the teaching and learning culture was brought about largely through the grassroots effort of faculty members from across the

university community. As she describes it, "…faculty began meeting in a group and in subgroups. The meetings were both formal efforts to engage in planning and action and information sessions where teaching circles were formed to discuss specific issues. Administrators joined and supported the effort" (p. 185). Consistent with Braxton's (2006) theory of faculty professional choices in undergraduate college teaching role performance, then, both faculty and administrators were participants in this study.

Faculty members with a variety of teaching experiences and backgrounds were actively sought out for inclusion in the study and intentional efforts were made to include faculty from the undergraduate schools and colleges on the campus that participate in SCALE-UP in order to ascertain how institutionalized the learner-centered movement is on campus. Likewise, efforts were made to include both tenured and tenure seeking faculty in the study as their experiences as either junior or senior faculty members provided for important contextual differences. Including a diverse group of faculty, helped me ascertain if the backgrounds of faculty members had any influence on how they interpret the policies and procedures of their particular college or school as well as the larger university.

The first group of faculty I contacted were those identified on the SCALE-UP website or in documents I reviewed that identified them as being active in the SCALE-UP project. The experiences of these women and men were helpful in understanding the impetus for initiating these changes and allowed for a deeper understanding regarding how the movement evolved and how they assess the current climate. Lastly, utilizing snowball sampling (Creswell, 2007; Marshall & Rossman, 2006) the largest group of

faculty I interviewed were those men or women identified by faculty colleagues or university staff as individuals who would be able to provide addition data or experiences not captured with other participants.

Administrators, a critical piece in Braxton's (2006) theory of faculty choices in teaching, were also sought out to be participants. This ended up including a chief academic officer, a department chairperson, and several professionals that work in centers supporting faculty.

Although the process of selecting participants had already begun with an informal review of documents available on each institution's website, formal selection started once approval was granted by the Institutional Review Board (IRB) at the University of Massachusetts Boston and the two sites. The initial point of contact was faculty and administrators either identified by SCALE-UP or identified through a search of their website. This first correspondence included an introduction of me and an explanation about the research project that I was proposing to complete. Additionally, as Stake (1995) recommends, I included a short description of the case, offered to make available a copy of my more detailed proposal, and explained that this research was being completed as part of my doctoral dissertation and that distribution of this research would be disseminated through traditional means.

Once access was approved, I sought and received permission of the IRB at the University of the Midwest and East Coast State University to start my research on their campus. Once this was granted, faculty who had been categorized as falling in either group one or group two were contacted via email with a short description of my project

and an invitation to participate in an interview with me when I was on their campus or via Skype if we are unable to coordinate mutually convenient time. When necessary, I followed each email up with a phone call as a means to schedule the interview and answered any questions or concerns that they may have had. I again made my more detailed proposal available, explained how this project was part of fulfilling the dissertation requirements for my degree, and explained that distribution would follow traditional dissemination of doctoral dissertations. I also confirmed that I respected their privacy and that all names would remain anonymous (Yin, 2009). Pseudonyms for all interviewees were used and only the college or school they are a part of could potentially be identified. Although no one took me up on it, I also explained that I would provide each interviewee with an opportunity to read a complete transcript of our conversation for accuracy and offered to make copies of my analysis available for their review and comment.

If unable to be found online, all faculty were asked to complete a short questionnaire that, in addition to basic demographic information including academic training, degrees, and faculty rank, asked them to briefly comment on their teaching practices and related philosophies. I also asked each faculty member to provide any course documents related to undergraduate classes that they teach. I closely examined these documents to complete a rubric of learner-centeredness for each course (appendix F). Created by Blumberg (2009) and based upon the work of Weimer (2002) who in the literature review in chapter two posits that there are five elements of learner-centered teaching, this rubric is widely used across higher education. I found it to be only

moderately helpful, however, for confirming that the faculty members being interviewed had successfully implemented learner-centered strategies for teaching and learning in their classrooms. Consistent with the goals of this research project, faculty who did not practice in ways congruent with the learner-centered model may have been excluded, but this was not the case with any of the participants and I received permission to observe their classrooms when time allowed.

Administrators were contacted in a similar manner with original outreach taking place by email with a description of the project, an invitation to participate, and a commitment to maintain anonymity. I similarly followed-up each email, when necessary, with a phone call to answer any questions and provide any additional information that they may have had and interviews were scheduled during the days I was on sight on via Skype. Suggestions for and access to faculty meetings or other similar events taking place that could provide additional data was also sought from these participants as well and I did participate in a department meeting during my visit to the University of the Midwest.

Even though it is common for qualitative researchers to start their research with only a few participants, Patten (2005) recommends that researchers, especially those writing a dissertation, provide a rough estimate of the number of participants that will be involved. Considering that there were two institutions and I was seeking to interview a minimum of three faculty members in each, I expected to conduct between eight to ten faculty interviews. With the anticipated addition of additional faculty as well as a goal to interview at least one department chair, I estimated that I would interview around 10-15

individuals. My strategy, however, was to continue to collect data until no new critical information was forthcoming and I had achieved redundancy (Patten, 2005). In the end, I had 16 faculty and staff members participate in this study (see Table 1 and 2 for a list of interviewees).

Table 1
Participants: University of the Midwest

Name	Title	Tenure Status
Michelle Amos	Post-Doctoral Teaching Fellow	
Nancy Clowe	Professor	Tenured
Pauline D'Arcy	Post-Doctoral Teaching Fellow	
Alan Goodman	Teaching Associate Professor	
Jennifer Hale	Teaching Assistant Professor	
Jane Jenkins	Department Chair	Tenured
John Joseph	Senior Strategic Analyst	
Caitlin King	Teaching Assistant Professor	
Thomas Rosselle	Research Associate	
Marian Segura	Associate Professor	Tenure Track

Table 2
Participants: East Coast State University

Name	Title	Tenure Status
Cathy Elcik	Assistant Professor	Tenure Track
Ryan Michaelson	Professor	Tenured
Lina Shamma	Lecturer	
Patrick Solomon	Graduate Student	
Carl Whetmore	Associate Professor	Tenured
Karen Genfi	Associate Director	

Data collection. Though Merriam (1998) suggests that case studies do not require any set data collections methods, Creswell (2007; 2009) identifies four types of data collection approaches that can be employed in qualitative research: interviews, observations, documents, and audiovisual materials. Yin (2009) offers a slightly augmented list when specifically addressing case study evidence. He suggests that the

six sources include: documents, archival records, interviews, direct observation, participant observation, and physical artifacts.

Regardless of the specific methods utilized, the goal of data collection in case study research is to utilize multiple methods. Rather than relying on only one source, when multiple approaches are taken together, richer data and thus a clearer picture is able to more fully emerge. Of the methods discussed by the most prominent scholars, I concentrated the majority of data collection efforts on observations, interviews, and documents.

To confirm that the selected approaches would be the most helpful in collecting the data needed for this study, I completed a pilot case study in the spring of 2014 preceding my arrival at the case study campuses. Yin (2009) strongly recommends that case study researchers conduct such a study, writing that, "A pilot case study will help you to refine your data collection plans with respect to the content of the data and the procedures to be followed" (p. 92). Not only did my own skills as a researcher grow through this experience, but I was able to pilot interview questions, obtain experience using the learner-centered rubric, gain a better sense of what I needed to do differently once I was in the field, and even gain greater clarification about the conceptual constructs I was using (Yin, 2003).

Convenience, access, geographical location, and the abundance of documentation, are listed by Yin (2003; 2009) as some of the criteria needed for selecting a pilot case study. As such, my pilot case took place at a SCALE-UP institution in Northeast. While the questions and issues examined in this pilot case study were broader than what was

guiding this dissertation research, the work and resources dedicated to this piloted experience greatly informed the process of completing this larger study (Yin, 2009).

Observations. One of the major strengths of case study research is that the case takes place in the natural setting (Stake, 1995; Yin 2003; 2009). As such, it was important that any time outside of interviews during the data collection period on campus was used for direct observation. Referred to as taking field notes, the data that emerged from these observational activities provided critical information that was not able to emerge through the other data collection means being employed (Marshall & Rossman, 2006).

Observation takes place in both formal and informal ways throughout the data collection period (Yin, 2009; Krathwohl, 2009). While fieldwork at the case study campuses provided for countless observational opportunities, Stake (1995) recommends that case study researchers concentrate only on those settings where the data being collected will be helpful in addressing the topics being researched. As he reminds researchers: "We can only look at a few aspects. We choose opportunities identified partly by issues, helping us to make a better acquaintance with the case" (p. 60).

With this advice in mind, I sought permission at each university to observe faculty teaching in their SCALE-UP classroom before one-on-one participant interviews so that the rich data gleaned from these experiences was able to inform both the observations and the interviews that followed (Marshall & Rossman, 2006). Though additional observations took place while I was on campus, these early observations allowed me to gain a deeper sense of the faculty members teaching methods, shed light into how they

incorporate learner-centered techniques into their practice, and exposed both differences and similarities between faculty members at different institutions.

Other formal observations in this study took place in an academic department office suite, at a faculty departmental meeting, and in each of the new active-learning buildings. These opportunities provided me with a chance to observe faculty and students in their learner-centered spaces as well as a chance to ascertain what messages, if any, faculty were receiving from central administrators and department chairs in regards to teaching and learning. It also provided for additional context into the institutional policies and structures as well as how the faculty members who hear and live them interpreted what they experienced.

I utilized a purposeful plan for field notes and the practice of recording the observations, provided for what Stake (1995) refers to as "incontestable description" (p. 62). As such, in each of these observation settings, detailed record keeping of events was kept that utilized a format suggested by Marshall and Rossman (2006) that divided the field note taking instrument into two columns, one of which was for descriptive notes while the second provided space for observer comments (See appendix G). These notes were not meant to merely summarize what went on, a mistake that Krathwohl (2009) says inexperienced researchers too often make, but were detailed and included as much verbatim conversation as possible as well as notations and critical reflection on the following, which aided in the process of writing up the study following data collection:

- Reflections on the process of selecting what was important to capture;

- behavior in the situation (comfort, obtrusiveness, apparent impact on others, treatment by others);
- ideas of hypotheses explaining what was occurring; problems in observing, recording, or coding;
- and suggestions for the next steps and from whence they were derived, and so on. (Krathwohl, 2009, p. 272)

Less formal observations also took place throughout the data collection period in any of the settings I found myself a part of that could provide additional data. As Yin (2009) suggests, there was a lot of opportunity for casual observations including settings where other data collection, such as interviews, were taking place. As he points out, "Even in studies using in-depth interviews, observation plays an important role as the researcher notes the interviewee's body language and affect in addition to her words" (p. 99). Each of these informal observation opportunities were documented in great detail utilizing the same method described above.

Interviews. Yin (2009) notes that because case studies are often about human affairs or events, one of the most important sources for information gathering is conducting interviews. This was particularly important in this study where faculty decision-making in regards to their teaching was being explored. How they described their experiences and made sense of their decisions provided for rich and diverse views of the case and illuminated the multiple realities that exist in the natural setting (Stake, 1995).

This research study involved the face-to-face interviews of both faculty and administrators using a semi-structured interview format that, while in-depth, maintained a conversational tone and acknowledged the value and usefulness of the participant's views (Marshall & Rossman, 2006; Yin, 2003). Unlike more formal interviews that follow strict interview guidelines, the flexibility I utilized here, is congruent with the assumptions of qualitative research (Stake, 1995; Marshall & Rossman, 2006). The goal of these interviews was not to get short yes or no responses but to obtain more detailed descriptions, linkages, and analysis (Stake, 1995). This was accomplished by creating an interview protocol that asked broad and open-ended questions that did not limit responses but encouraged the interviewee to share their experiences and realities in greater detail (Yin, 2003). Instead of asking "why" questions, for example, more "how" questions were posed (Yin, 2003; 2009). For example, Hora (2012) asked his participants a question that was frequently included in this study as well: "How, if at all, does the organizational context influence your teaching?" (p. 214)

Testing these questions during the pilot case study allowed me to hone the queries and grow my own skills as an interviewer, a task that several scholars note can be quite challenging (Maxwell, 2005; Stake, 1995; Yin, 2003; 2009). There are several potential pitfalls with interviews and some common weakness, Yin (2009) identifies, is that bias can emerge in response to poorly worded questions or instances of reflexivity can take place when the participant merely responds in ways that they believe the interviewer wants to hear. Training to become a better interviewer certainly helped me limit the

likelihood that these deficiencies materialized and the pilot study was one opportunity for me to gain this additional training.

Interviews took place in the participant's office or at another equally comfortable location on campus that they chose. Several interviews at UMW were completed in the department conference room and one interview took place over lunch at a popular restaurant just off campus. Each interview lasted between 40 and 50 minutes and was digitally recorded and transcribed verbatim so that I could carefully listen to the interviewees' responses instead of having to write down copious verbatim notes (Stake, 1995). I assigned each interviewee with a numeric code that only I knew so that the identity of the participant could be preserved until I gave them a pseudonym. I concluded each interview with asking if there was anyone they would suggest I talk to in order to learn more so that I could continue to gather new sources of information (Creswell, 2007) and followed member checking protocols by offering to provide them with a copy of the transcript for clarifications and additional feedback (Stake, 1995).

Documents. The last source of evidence in this study was the use of documentation. Yin (2003; 2009) notes that in nearly every case study topic, time spent gathering evidence through a careful review of documents is likely to generate important data. Not only can new information emerge during this detailed review but documents often corroborate, and sometimes contradict, data gained through the other aforementioned resources (Yin, 2009). Both were extremely helpful in producing reliable empirical research as evidence congruent with what already emerged served as validation of findings while contradictory information highlighted areas that required

further investigation. No divergent information emerged in this study, which indicated to me that further study and data collection was no longer needed.

Scholars indicate that document review plays an important role in case study research and the review of documents can take place both before and after the other methods have been carried out (Yin, 2009). As such, a review of documents in regard to the learner-centered movement at the case study sites started early. Simple internet searchers on Google and on the SCALE-UP and institutional websites provided access to a variety of important documents that not only introduced me to the case study site but helped create the original dissertation proposal. These early searches revealed documents that provided an introduction to the history of the universities, a copy of the most current faculty handbook detailing established information on promotion and tenure guidelines, a comprehensive list of teaching award recipients and selection criteria, and several samples of undergraduate course syllabi.

In addition to reviewing the documents identified above, I tried to gain access to any information regarding the early efforts to create or adopt SCALE-UP. Documents that Marshall and Rossman (2006) identify as being important sources of information included newspaper stories, announcements, and other related information that was very valuable in understanding the context for the transformational change that has taken place on their campus.

Similar to observations, however, only those documents that were related to the research questions were analyzed (Marshall & Rossman, 2006) and in addition to intuitively gathering information that I believed would be useful, I sought out

recommendations from my participants and gatekeepers as well. As insiders in their organization, they had access to information and documents that are not readily accessible to those of us who are not a formal part of their community.

Data analysis and synthesis. The difficulty of conducting case study research described earlier becomes even more apparent during data analysis. Yin (2009) acknowledges this complexity, commenting that "The analysis of case study evidence is one of the least developed and most difficult aspects of doing case studies" (p. 127). He suggests, however, that analysis should be conducted following at least one of four potential strategies: theoretical propositions, developing case descriptions, using both quantitative and qualitative data, and examining rival explanations. These strategies, in turn, can be used by practicing techniques and Yin (2009) identifies five options; pattern matching, explanation building, time-series analysis, logic models, and cross-case synthesis.

Upon careful consideration of the research questions and the proposed data collection strategies that I had conducted, I analyzed the data in this case study using a theoretical proposition strategy and relied on pattern matching as the analysis technique.

One way I focused the data analysis was to utilize the theoretical framework that was guiding the study. Braxton's (2006) Theory of Faculty Professional Choices in Undergraduate College Teaching role performance was a starting point to organize and make sense of the collected data. Yin (2009) posits that this is the preferred strategy and that relying on the theoretical proposition allows the researcher to prioritize the collected information and concentrate on the information that is most congruent with the theory.

Analysis and interpretation in case studies, Stake (1995) notes, is a "…search for meaning…a search for patterns, for consistency within certain conditions, which we call 'correspondence'" (p. 78). This is done by reviewing the relevant data and becoming so familiar with it that the most prevalent themes or patterns start to emerge (Marshall and Rossman, 2006). This happens when similar meanings appear over and over again (Stake, 1995).

Discovering meaningful patterns required that the data be coded, a process where tags are attached to phrases, words, or ideas that may be important (Krathwohl, 2009). Four techniques that Krathwohl (2009) identifies are analyzing words, scrutinizing large blocks of text, analyzing linguistic features, and physically manipulating text.

I utilized grounded theory to develop coding categories, an analytic technique that required me to develop theory directly from the data (Krathwohl, 2009). Since this study was guided by specific research questions and a conceptual framework, the ground theory utilized in this analysis was semi-structured (Hora, 2012). Instead of allowing all of the coding themes to inductively emerge, the conceptual framework provided for some given codes that were applied to earlier analysis.

To help further analyze those data, I submitted each interview transcript into NVivo qualitative analysis software where I was able to refine the initial codes and create new titles that provided for a better fit with the data (Krathwohl, 2009). I then started to develop working theories, satisfying my own learning preferences by graphing the code relationships I had identified (Krathwohl, 2009).

Once completed, the final step was interpretation and I did this following Stakes' (1995) concept of naturalistic generalization. As he describes it, "Naturalistic generalizations are conclusions arrived at through personal engagement in life's affairs or by vicarious experience so well constructed that the person feels as if it happened to themselves" (p. 85). This required a careful reporting of the case and the use of thick description that allowed the reader to vicariously experience the setting. It also required the purposeful attempt to triangulate the data (Stake, 1995). Here observations could be supported by documents, interviews could be substantiated by member checking, and assertions could be made clear by detailed description of the setting.

CHAPTER 4

INSTITUTIONAL NARRATIVES AND FINDINGS

Case 1 Narrative

It was with a mix of excitement and nervousness that I steered my rental car toward the campus of the University of the Midwest. Though I had been in the city twice before, my exposure to the state's well-known flagship campus was limited to a quick drive through when I was in town several years ago taking in a baseball game between my beloved Red Sox and the local town team. Like many of my friends in higher education, I always like to visit local campuses when I am in a new city and taking even a few minutes to see UMW during my first visit to the area was no different.

With it being a Sunday morning, the drive from the airport to campus was an easy one, a nice break from the typical Boston traffic I have to deal with on a daily basis. With my GPS on the seat next to me, I drive around the area, street light banners announcing my arrival. My plan is to acclimate to the area from my car then park and spend some time grabbing lunch and taking in the sites before checking into my hotel that is conveniently located adjacent to campus.

It is early October and the weather is still nice enough to get away without wearing a jacket and as I drive the streets in and around the campus, the students I do see are clad in t-shirts and sweatshirts in school colors emblazoned with the logo of their

institution. Most who have gotten up this early on a Sunday are largely making their way with small groups of friends to the various diners, coffee shops, and casual restaurants that surround campus.

Though UMW is located in a metropolitan area, its campus is in a fun and eclectic neighborhood a short distance away from downtown. There are, conveniently, several rail stops through campus that can whisk a passenger to a variety of places throughout the city and surrounding area, as well as a significant bus and shuttle system to further support any transportation needs. This environment creates a nice college town atmosphere inside of a larger city, and the two commercial areas I have come across have the typical mix of restaurants, bars, and fast food options with several stores dedicated to selling books and a plethora of university logoed clothing and trinkets. Likely representing the large and diverse University community that surrounds it, the food offerings are very varied and represent nearly every genre of cuisine I can think of. A bánh mì restaurant catches my eye and I mentally note several more places I would like to visit over the next several days.

It is not until I leave my car at the hotel and walk around later that afternoon that I finally get a sense of the scale of the campus. The University of the Midwest is a large research one institution with over 50,000 students, 4,000 faculty, and several thousand staff members spread across 18 colleges, including medical, dental, and veterinary sciences. As I make my away around campus trying to observe the community and the cultural artifacts that I am seeing, I scout the location of my interviews the next day, make my way toward and through the student union, and then find a library I can spend

some time in to write down my impressions and observations thus far and prepare myself for the next day. Now early afternoon by the time I get to the library, the ornate reading room I find myself in quickly fills up with students who are clearly settling in for a long day of studying, they, like me, also preparing for the upcoming week.

One of the first persons I reached out to at the university was Jane Jenkins, an academic, my early research revealed, who is a well-known and vocal proponent of the learner-centered paradigm. Her name repeatedly came up in searches I did even prior to selecting her institution as a site and I found myself a bit anxious to be emailing her. What if she does not respond positively?

Within hours of my note introducing myself and broaching the topic of my research interests at her institution, however, Jane responded enthusiastically. She readily embraced my desire to visit her school and was extremely helpful in identifying participants, both faculty and staff, who would be able to provide a number of unique lenses to look through in order to better understand teaching choice and the adoption of the learner-centered paradigm and practices at UMW. As a department chair, Jane also secured space in her office suite where I could work between interviews. I could not believe how helpful she was and I feel indebted to her and her colleagues for the manner in which they welcomed me into the community and willingly participated in my research. All they asked of me was to present an informal seminar on my topic at a department meeting taking place later that week. This too was an amazing opportunity that I was more than happy to do.

With my typical Starbucks Passion Ice Tea in hand, I made my way towards the department office first thing on Monday morning. Though I had found the building during my reconnaissance mission the day before, the huge science complex of two connected buildings of several floors proved to be incredibly confusing and it took me several minutes to find the office after traversing a maze of hallways and finally having to have Jane come find me. Though I felt a bit foolish at first, Jane assured me that she had given me the wrong room number and that the number she did give me was of a restricted lab area. Plus, she said warmly, I was hardly the first person to have difficulty finding their space.

"I'll let you get settled at your desk and then we can grab a cup of coffee," Jane offered while using her ID card to open the side door to the department office. Through the door was a recently renovated space that was very different than the traditional suite of faculty offices I am used to. In fact, there were very few private offices to speak of. Though there were a few offices around the perimeter of the space, in the center was two double rows of assigned workstations where the department's faculty work in modern cubicles. Jane brought me to the second cubicle closest to the door and told me that the faculty member assigned there was likely not going to be in during my visit. Sensing my surprise at what I was seeing, she confirmed that this was, in fact, brand new space. "We are getting used to it ourselves," she confessed. She pointed around the room and oriented me to the design elements that they had purposefully implemented. "There are a few offices," she noted naming some of the faculty I can see through their glass windows, "but the rest of us are out here." She points out several conference and collaboration

areas, some resembling typical conference rooms and others that have more casual, comfortable seating meant to invite spontaneous teamwork and dialogue. She then showed me that the desks move up and down with the simple toggling of a button on the side of the desk. "I tend to stand," Jane said motioning to her station that is in the row across from where I am going to be. Intrigued, I decide that I too will spend the next day standing at my desk as well.

The department I will be spending my time in and that houses the faculty I will be speaking with is a new one and "learning" was purposefully added to the department name. Made up of both tenure and tenure-seeking faculty as well as those in the college with the title of "teaching professors," the new department aims to not only teach science congruent with the learner-centered paradigm but to research and study their experiences and related outcomes as well.

Dr. Jenkins explains over our coffees that morning that this department was born out of the expanding interest in evidence-based teaching that had been going on at the university and within her college in particular. She expanded on this more at our formal interview later in my visit, crediting a recent dean for being an effective leader. As she explained it, "Our former dean was a very, very big proponent of learning." He provided critical support to her and to the development of a learner-centered culture within the college.

When the Dean announced his retirement, Dr. Jenkins recalled surprise around the college turned into fear for some who were concerned that the advances they had made over last several years could be in jeopardy:

> You start to worry then because it would be really easy at a research university for teaching to fall out of favor, and you don't know who the new dean is going to be, et cetera. He did a couple things in his last year.

While this did not end up happening, the dean made several changes prior to his departure, one of which was the creation of the department and the appointment of Dr. Jenkins as chairperson:

> The way this department came about is we had been nurturing the biology program with mostly non-tenure track faculty. It grew into this group, a group of amazing people. We've got PhDs, tenure track faculty, and tenured faculty, and we've purposely chose them to emphasize teaching in their work. The dean supported making promotion tracks for teaching professors and having that designator, so that happened. Again, I think that it's like I would go ask. He would say, "Yeah. That's a great idea."

After our brief conversation, I jot down a few questions that I would like to ask when we meet more formally and Dr. Jenkins introduces me to the faculty and post-docs who are there in the suite. Many of these men and women are scheduled for interviews later on in the week so I mentally try to connect their names with their faces.

My first interview is not scheduled until later that afternoon, which gives me time to visit the new classroom building and observe a class. My travels the day before did not bring me to this building and I was excited to finally see it in person after looking at pictures on the web prior to my visit. Luckily one of the post-docs offered to walk me over, greatly reducing the likelihood that I could get lost again.

As my guide helps make our way through some connected buildings and out onto the street, the campus is alive with activity. A sea of students on bicycles pedal across campus on designated paths towards their 10:00 am classes and we have to wait a moment for there to be a break in bike traffic that will allow us to cross. As we do so, I can see the new building across the street and it is certainly an impressive sight. Like so many things about UMW's adoption of the learner-centered paradigm, this buildings design, I am told by many of my participants, was purposeful. Positioned at a critical point on campus, the building was not only meant to be physically interested and attractive but was to serve a more important purpose. As one of my participants explained: "Here was a great opportunity to build a building that was meant to stand for many years, but also was a strong focus on student learning."

I make it to the classroom just as many of the 150 or so students in the class are making their way to their seats and my guide introduces me to the faculty member who immediately tells me that he is more than happy to allow me to observe as he readies the technology for his upcoming class. I say a quick goodbye to my guide, assure her that I will be able to make my way back to the department, find an empty table to sit at, and take out my classroom observation sheet to draw a classroom diagram and record my observations.

This room itself is congruent with the design principles of SCALE-UP and very similar to the TEAL rooms I visited six months earlier at the Massachusetts Institute of Technology. Grey with light blue walls, the large room has 19 round tables throughout

the room each hosting nine students. Each table has microphones that a student can turn on and off as necessary, a monitor that can project a student computer, and a white board.

A month into school, the students habitually sit with their team, make conversation, and prepare for an assessment (Immediate Feedback Assessment Technique) they complete each Monday, first individually and then as a small team. When allowed to do so, students debate what answers they believe to be true, utilizing the white boards to work out their answers before settling on a final decision as the instructor and his three teaching assistants monitor the groups and their progress. The group closest to me worked together and answered 14 of the 15 questions successfully. They later asked the faculty member about that question they got wrong when he opened up the floor for discussion.

Although the faculty member was quick to point out to me that this was the first time that he had taught a class utilizing these methods, he did so incredibly well. While it may be not as choreographed as the class I observed at MIT with a very experienced faculty member, many of the most important tenants of SCALE-UP and the learner-centered paradigm were undoubtedly present. Despite the size of the room and the number of students present, it feels smaller as he walks through the room, briefly lecturing on the day's topic (today it was something to do with genes) and providing many opportunities for individual and group problem solving mixed between. There are frequent opportunities to ask questions and when those that he presents go unanswered, he poses it to the tables to discuss and answer as a group.

As the literature suggests, this former lecture-based class is a different experience when facilitated this way and students have very few opportunities to sit back and be passive. Instead, they are asked to engage with both the topic and each other in ways that allow them to apply concepts in meaningful ways and help them learn. There is, I noted on my classroom observation form, a "leveling" of the student/faculty relationship. "It feels different," is something I heard over and over again from the faculty both here and at my second site. I could not agree more.

After a conversation with one of the teaching assistants who is working on his PhD and committed to the learner-based paradigm after his experiences as a TA at UMW, I leave to explore the rest of the building. Every part of the building is utilized in purposeful ways with both active and traditional classrooms making up the majority of the building space and select student-centered offices and departments also located there. Even the hallways are leveraged to create additional learning spaces with group seating placed throughout with white boards attached to the walls to facilitate group study. Learning, these spaces communicate, is not just meant for the classrooms but happens all over. I return later that week to see if these spaces are being utilized even after classes are over and I was not surprised to see small groups of students clustered around nearly all of them.

As I leave the building and debate where to go to lunch, I am fairly confident that the aforementioned bánh mì restaurant is a short walk away, I am looking forward to the upcoming interviews. Observing class and walking through the building helped bring the

literature I had been poring over come to life and I was anxious to learn more about how UMW was able to introduce meaningful change in the scale that I just witnessed.

Exposure and reaction. The faculty at UMW who participated in this study represent a number of different academic backgrounds, pervious graduate school training, current and past research agendas, and college teaching experience. Ranging from new post-doctoral teaching fellows to senior faculty who have been in the academy for multiple decades, their introduction to learner-centered teaching, though varied, all resulted in eventual changes in their classroom practices.

Understanding the adoption of learner-centered teaching by these faculty in their classroom practice is a complex one that is predicated upon and influenced by both internal and external influences. Though a faculty member's decision-making process regarding pedagogy is a unique process for each individual, a teacher's first exposure to the learner-centered paradigm is a critical moment in this progression. How, and in what way, the faculty at UMW were first oriented to the paradigm and the underlining philosophies that inform it, was an important first step in the eventual process of exploring and evaluating the tenants of a learner-centered practice. It is through this exposure that the participants either started to consider a change in their own guiding principles or were able to confirm previous thoughts and beliefs that they had been forming about teaching and learning.

For the faculty at UMW, early exposure to the learner-centered paradigm took place through a variety of different means and both similarities and differences emerged in the stories of junior and senior faculty members. For many of the junior members of

the department and post-doctoral fellows, all of whom pursued their terminal degrees well after the 1995 Barr and Tagg article called the question about a new paradigm in higher education, their first experience with teaching undergraduates took place in graduate school. This exposure to teaching as a doctoral student started to pique their interest in the teaching aspect of their discipline and many sought out and readily accepted any teaching opportunities that were made available to them. One current faculty member described his graduate experience, sharing that he explored teaching as part of his recreation and that it fed his growing interests and also positively impacted his work in the classroom:

> I took my TAing really seriously, and got my awards for it, because I guess that's what I did. Then, I jumped on an opportunity to teach a seminar on nerve repair, just because it would be a great thing to learn.

Two of the post-doctoral department members shared similar pasts, stating that their desires to teach more started to challenge their original intentions for entering the professoriate and their goals of being a prolific researcher in their field. Instead, they became increasingly interested in teaching as well as exploring the opportunities that existed to create a research agenda around science education. Michelle Amos, a teaching fellow post-doc at UMW, describes her experience this way:

> I found while I was doing my graduate work that the education pieces of that education were the things I was most excited about, the things that I was staying up until midnight working on, the things I was willing to get up early in the morning thinking about. It was less of the actual biology research itself.

In a similar vein, Pauline D'arcy, another post-doc at UMW, also unearthed a passion for teaching during her graduate studies. As such, she coordinated a strategic post-doc search process and took particular care when choosing her first position out of graduate school. She wanted to be sure that she picked an institution and a mentor who was "…really going to be flexible about me getting teaching experience while I was a research post-doc as well." Fortunate to find an institution and a mentor at UMW that allowed her the space to pursue both interests equally over nearly seven years, Dr. D'arcy continued to successfully manage both initiatives while allowing herself to organically discover what she wanted to do. Reflecting on the past several years at UMW, Dr. D'arcy discussed her vocational thinking:

> I just really liked being in the classroom. I didn't want to manage a big laboratory. As much as I loved being at the bench, I didn't really want to manage a big laboratory and spend a lot of time competing for grants and so on.

As a result, she sought out as many teaching experiences as she could.

Beyond the experience of teaching that many of the faculty had in graduate school, formal exposure to the learner-centered paradigm took place later in their graduate careers through programs meant to prepare future faculty members. Often coordinated by centers for teaching at their graduate institution, these experiences exposed future scholars to the tenants of teaching as well as the robust literature that exists on the learner-centered paradigm and the related teaching practices that support it.

Since their own education to date did not resemble a learner-centered approach, the training they were getting about college teaching and the learner-centered paradigm

resulted in a mixed reception. Several recall being extremely skeptical at first, unable to see how, as one participant described it, this ‘touchy feely stuff” could work in a real life classroom. This was particularly hard to envision for those who were teaching or co-teaching required introductory science courses with large student rosters. In addition to having a strict curriculum that needed to be covered, their courses were often relegated to immense lecture halls that were built to accommodate the equally large number of students who would be taking these classes. These ideas also challenged the participant’s own operating paradigms as well as those of their colleagues.

For others, these seminars and the topics they discussed were a catalyst for additional critical thinking, forcing them to not only focus on their teaching, but also on student learning. As one participant told me, the topics she was listening to and talking about in the seminar challenged her preconceived ideas about teaching and learning:

> That was my first introduction to active learning and really this idea that even though, maybe, as a student I was able to sit for 90 minutes and listen and be interested and write things down and remember them, that's sort of unusual. More often than not, that's not a good way of learning.

Likewise, another participant who attended UMW for her PhD and is now employed in the department as a Teaching Assistant Professor, indicates that the paradigm immediately resonated with her:

> My reaction was that it just felt like the way it should be. It felt natural, it felt like the way I wanted to teach with the back and forth so to me it was like, "Okay, yeah, this is the way I want to do it."

For the more experienced faculty, it was their own personal reflection on their practice that started them down the path of formally discovering different and more effective ways of working with their students. Much of this early exploration preceded that learner-centered movement but laid an important foundation to their thinking about teaching and learning in really meaningful ways. Dr. Jenkins, the chairwoman at UMW who came to be one of the most effective champions of the learner-centered movement at that institution, describes how her experience teaching science early in her career served as a precursor to her work in the learner-centered paradigm. In her case, the impetus for her first search for more effective teaching strategies were the students who were struggling in her classroom:

> The students made really bad grades, 40 or 30 on the exam. My course evaluations were so low, so that started me on the path of science, using my science to discover what's wrong with them initially. That was what I was asking. I was like, "What's wrong with them? If I tell them this, then maybe they'll do better." This is back, I don't know, 25 years ago.

Even though her original instinct was to look for deficiencies in the students in order to address their poor grades and her critical course evaluations, her significant background as a scientist provided the background and skills necessary to make observations, hypothesize, test, and eventually learn more about the phenomenon taking place in her classroom:

> I was continually doing little experiments and not realizing there's a whole literature out there. To be honest, it never occurred to me in a million years.

> Also, back in the day, there's no internet. How would you even know that this stuff exists?

Little by little, though, these "experiments" started to result in some fascinating findings and positive educational outcomes for students that, in turn, further motivated Dr. Jenkins to continue exploration:

> Through trial and error, coming up at rediscovering things that if you ask students or motivate them to have a reason to learn something, they would learn. If you made them partners in the learning, they would learn more. Until slowly that started, I think, becoming more and more interesting to me than the (science) research that I was doing.

A similar experience was described by John Joseph, a former tenured faculty member at a previous institution, who was always very interested in that school's Center for Teaching and Learning. Attending all of their programs and taking advantage of a plethora of their services, Dr. Joseph was soon appointed as the Center's director, eventually moving to UMW several years later in a similar role. Recalling his exposure to the learner-centered paradigm, Dr. Joseph first started making informal observations in his own class, assisted by his personal experiences as a former competitive athlete:

> I was always pretty tuned into my own responsibilities as an athlete and what it took to move myself forward. Then when I became involved in helping students learn physical skills, learn motor skills, it was obvious that it was very much of a joint responsibility, mine and theirs. Mine as teacher, theirs as learner.

Finding the literature in his new work in the center was a critical moment for Dr. Joseph and it further fueled his interest in the topic:

> As I looked at the way that it was described and the kinds of things that outlined the paradigm itself, it probably traced back mostly to that 1995 paper by Barr and Tagg. Then from then on everyone was writing about it. It became not just something I was conscious of but something I was trying to practice in my own teaching. It followed both an academic interest of reading and becoming part of the workshop scene at the teaching center, and then trying to actualize that; at the same time, reflecting on my own role. It was a combination of things, I think, that came forward.

For the remaining faculty, their first exposure to the learner-centered paradigm took place either while at UMW or after coming to UMW and learning about the efforts that were taking place there. Ongoing efforts taking place at both the college and institutional level initiated discussion with many faculty and innovation grants that were earned from the government or other organizations allowed some influential participants to partake in discussions and workshops about this important topic. Over two or three years, Nancy Clowe remembered, she and some colleagues earned a grant to be able to work on, implement, and report back to the campus community and others about the innovations that they were introducing in their class.

For other faculty who came to work in the department, their exposure was very quick and they were asked to not only embrace some learner-centered teaching methodologies, but to practice them as well. One faculty member described it as “being

thrown in the deep end" since she was given a class that was assigned to an active-learning classroom and was told that having an active classroom was an expectation. This is a common practice at UMW and something that will be explored in more depth in a later section.

How and when a faculty member is first exposed to the learner-centered paradigm is a critical component in efforts to initiate and facilitate large-scale adoption on a campus. Though the faculty interviewed here had all adopted the paradigm and almost exclusively teach in ways that are congruent with the required practices, Alan Goodman, a Teaching Associate Professor provided some thoughts about why this is a difficult concept for many of his colleagues in higher education:

> I think there's two things. One, I would say that we know what we're familiar with, and we as animals really are drawn to the familiar…most of us did okay in lecture classes, maybe sought them out, maybe had no choice. We go to seminars, we go to meetings, and people give lectures, short or long. We're asking them to imagine doing something different than what they've had, than what their esteemed examples, mentors, models have done. We're also asking them to believe that students have as much to give to each to other as we could, and that works against our ego, which says that we have to the most to give, and that really if we just talk to them, they shut up, and we'd be doing better for everybody.

At UMW, the dominant culture is being challenged in meaningful ways and a number of policies and structures have been created to encourage and support this transformation.

Policies and Structures

Once exposed to the learner-centered paradigm, a significant influence on a faculty member's use of related practices is often informed by the culture and environment of a particular institution. At the University of the Midwest, structures and policies, both formal and informal, were leveraged in a way that created an atmosphere that encouraged and supported faculty experimentation and exploration of learner-centered adoptions in their practice. How and in what way each of the participants experienced these structures and policies was fairly universal, though each individual did so from very different places. What they saw and how they interpreted their environment was a critical second step in their teaching choices.

The unique lenses from which the participants viewed their environment was influenced by a complex and intricate mix of interconnected pieces, some of which could be easily identified and others that are more difficult to determine. Additionally, some pieces can be controlled and managed by an individual while others were more random and outside of any one faculty member's sphere of influence. Most commonly, for example, these related lenses were shaded by their position at the university, the number of years that they had been employed at UMW, the courses that they were assigned to teach, their own internal teaching motivations, and the aforementioned exposure that they may or may not have had with the basic tenants of the learner-centered paradigm. At UMW, the most significant structures and policies included organization and leadership, finance and academic departmental configurations, faculty positions, available training,

and physical facilities. Each had an impact on the overall learner-centered environment at UMW, as well as a positive influence on the teaching choices of those that participated in this study.

Organization and leadership. A critical piece of the Braxton (2006) theory is the influence that institutional leaders have on the eventual teaching choices of their faculty and at UMW, their role was critical in the introduction and continued support of a large-scale learner-centered adoption. With some purposefulness, as well as some instances of serendipity, the learner-centered movement was first nurtured by several senior leaders at the institution, namely the President, Provost, Associate Vice President of facilities, and a few academic Deans. Dr. Joseph's recollections provide some context for the environment that existed at the time:

> It was, again, a really odd connection of forces that had been going on, both inside the university and then outside the university. At one time, mid 2000s or so, the university was engaged in strategic positioning. It was aiming at trying to become distinctive like most universities do in these plans.

Committed to using this planning period to reimage undergraduate education at UMW, the leaders of the institution were bold in their vision and willing to consider and implement innovations where appropriate. Dr. Goodman describes the influence of these men and women and the leadership culture that was evident there at the time and continues to guide the institution:

> I think that was part of it, was to have an institution where it wasn't just "cover your ass" leadership, or do what looks good, what everyone else is doing leadership. It was really like "Let's try to do great things and stand out."

Ultimately, a reorganization that accompanied the strategic plan gave rise to some shuffling of academic departments as well as the closure of a vulnerable college. This resulted, Dr. Joseph observed, in an opportunity for university leadership to initiate some meaningful change: "The President countered that closing, I would say, with a strong message of investment in students. That was still meant to be there." The result was the creation of UMW's first two active learner classrooms, a pivotal moment in the learner-centered movement that was about to unfold.

The leaders mentioned above were soon joined by a new Associate Dean in the College of Science who quickly became a significant influence on the learner-centered movement at UMW. Though she had a successful career as both a teacher and a researcher at another large land grant institution, Dr. Jenkins accepted an offer to interview at UMW on a whim and eventually took the position, noting that "It was just the right fit." Though she did not plan on entering academic administration prior to her invitation, campus visit, and subsequent exploration of UMW, something about the campus and community spoke to her, something that many other participants sensed at this same time: "This was a place that you could look at, and you could see the potential for what could be there that they didn't even see. That brought me here."

One of Dr. Jenkins' first responsibilities in her new role at UMW was to convene a task force that was asked to re-think how the college was teaching their courses,

particularly, introductory biology. Already thinking critically for many years about her own teaching and committed to the learner-centered paradigm, Dr. Jenkins immediately was interested in the active-learning rooms that the university was in the process of creating. Once again, serendipity played an important role:

> It was a happy accident that the university was thinking about building and building for teaching, at the same time we were developing this class. We were able to wiggle our way in. What happened was...the university had decided they were going to make two pilot rooms, essentially, that were modeled on Bob Beichner's active-learning classroom.

Though originally planned to be smaller than typical SCALE-UP rooms, Dr. Jenkins noted some were skeptical that active learning could take place with large groups of students, she leveraged her role as Assistant Dean to suggest that they create at least one large room by removing a wall and making two smaller rooms one. As a result, they made a room with 135 student seats to go along with the planned smaller room.

Serious about their exploration of active learning and SCALE-UP, Dr. Jenkins noted that leaders at the institution knew that it was critical that they research the outcomes of these learner-centered trials to gauge satisfaction and to ascertain if any meaningful learning gains were being realized:

> They studied us. They studied everybody in the little room on this campus, and a big room on the (other) campus. The students loved it. The faculty loved it. Good things were happening and that was the catalyst. That was the data that they used to make (the new building).

This research was critical to many faculty who were trained to value and respect the findings of empirical research, especially scientists who find value in what the data is saying. Caitlin King expanded upon how this research was meaningful to many of her colleagues and how it helped them imagine what was possible in learner-centered teaching as well as the connection that researching it could have with their work:

> I think also there was the people that were in that were interested in evidence based teaching and so they were like, "We're actually doing something real here" and it is research as well and it is the scientific practice as well so I think that kind of added that weight to it.

As the university continued to research the experiences and outcomes of their learner-centered attempts, Dr. Jenkins' role in the adoption and eventual construction of a new building continued to grow. She became an influential leader and learner-centered advocate within the college and throughout the university and every participant in this study identified her as one of the most critical leaders in the adoption of this new paradigm at UMW. As Dr. Goodman explains, Dr. Jenkins was a particularly strong leader who had the skills necessary and the empowerment needed to manage a significant change process:

> The fact that (Dr. Jenkins) was hired and given the reigns as opposed to squashed is, I think, credit to the institution and larger, higher level leadership. She is different in the sense that she really wants to make big changes. Strangely, she has a desire to do things economically. It's a combination. You can imagine someone who's just a budget cutter but doesn't have any vision and imagination.

> You can imagine someone who has vision and imagination but is told quickly that they are just being unrealistic in terms of finances. She somehow manages to do both...

Though able to reluctantly acknowledge her role and influence when pressed a bit, Dr. Jenkins repeatedly points out the equally important part that her dean, who has recently retired, played as well. Not only did he hire her as his associate dean, but he provided her and her colleagues within the college with the space and support needed to usher in these significant changes. Throughout her interview, Dr. Jenkins frequently noted his considerable influence on the college and faculty, saying that, "…we had a dean who philosophically was passionate about learning and teaching." Dr. King expressed similar sentiments, highlighting that the college's dean was a significant influence on her and her faculty colleagues as well: "We certainly had a very supportive dean…I think that made a big difference that we felt that we were being supported in our efforts and that kind of thing."

Together, Dr. Jenkins and the former dean collaborated in creating structures and policies that transformed the culture and operating procedures at the college. Jennifer Hale's comments captures this well:

> I think (Dr. Jenkins) is probably in some sense the front-runner and the flag bearer or whatever else you want to call her on that. And one of the things that, the sort of sentiments that's been attributed to (the former dean) a lot, and I think I've heard him say it himself, that if you put the students first, everything else will

follow…he, at least, sort of created the premise of environment for, "Let's do what's going to seem best for the students."

With the creation of the learner-centered pilot rooms, faculty across the university had opportunities to experience teaching their courses in an active-learning, SCALE-UP format now supported with purposefully designed spaces and technology that helped facilitate this new approach. With the aforementioned support of many institutional leaders, faculty were encouraged to reimage their courses and to incorporate methodologies congruent with the leaner-centered paradigm. Faculty in the college of science, in particular, were encouraged by their dean and associate dean to take advantage of these spaces as a means of enhancing the quality of teaching as well as the educational outcomes of their college's students.

While Dr. Jenkins and her colleagues who were working on introductory course design were quick to embrace the opportunity, not surprisingly, many faculty were not as open to change. For the very reasons identified in the literature review, faculty had a hard time giving up the instructor paradigm that had been their operating philosophy for so long as both students and faculty.

Little by little, though, as more and more faculty took a chance and had their own experiences in the spaces, a critical mass of faculty leaders within the college of science started to emerge. Dr. Jenkins recalled that this movement gained palpable momentum when well-respected faculty members started to convert their courses and embrace active learning. In her interview, she shared the story of a very influential geneticist in her college and the effect that he and his conversion had on other faculty:

> He just got the active learning bug. He was already teaching upper division genetics and cell biology, and he just converted his classes. It's one person converting his classes. The classes became, instantly, the most popular section out of all the sections, and then he was very willing to help others. He would take people under his wing and show them what he did and help them out, go teach with them.

Respected faculty colleagues were often some of the most influential advocates of the learner-centered movement and those that were considered either formal or informal leaders within their departments and colleges, were often looked to by other professors trying to better understand the philosophy and practices.

Leadership at all levels of the institution played a critical role in the early stages of the learner-centered adoption at UMW. From higher-level university leaders to senior faculty members at the college and school level, the support, as well as the practices, of these influential teachers and scholars was critical for the culture change that was to emerge. As more faculty utilized the new rooms and empirical research continued to find positive educational outcomes that were being realized in these classes, significant momentum started to materialize. This momentum, and the developing philosophies that guided it, was a critical piece in the creation of the learner-centered culture that currently exists at the university and within the college of science. When coupled with the additional influential structures and policies that will be discussed further, the university was on the precipice of meaningful change.

Finances and academic departmental configurations. Like any large, complex organization, financial resources are highly sought after and this reality is no different at UMW. As a large institution with several distinct schools and colleges spread across an equally vast campus, institutional leaders are constantly seeking creative ways to identify additional funding opportunities to support their programs and initiatives.

The current funding policies at UMW provide a structure that some participants point to as a further incentive to adopt meaningful and effective teaching pedagogy. It is also, Dr. Jenkins theorizes, one reason that the college created a new department of biology that included a focus on teaching and learning in both practice and in its name. When asked to share how, in her perspective, the department came to be; she told me that it was grounded in both an institutional commitment to teaching and learning as well as a unique funding formula that exists at the institution:

> Luckily, the business model here at the (UMW) directly returns all tuition dollars that are generated, essentially, there's a formula, back to the college that teaches it. The formula is that we get 25% of the tuition of our students in any of the classes. Whatever their total tuition bill is, we get 25% of it for our majors. Out of the non-majors that we teach, we get 75% of the tuition for the classes we teach.

This funding mechanism not only allows the college to dedicate money for student services and related expenses, but also has a positive effect on the education taking place within the college as Dr. Jenkins continued to explain:

> That incentivizes every single dean on this campus to really care about teaching and care about students coming in wanting to take their classes…People really care about butts in the seat. The way you get butts in the seat is to teach high quality classes.

With documented learning outcomes continuing to further support instructional change and financial policies and models that provided additional incentives to do so, the college of science continued to make meaningful progress toward fully embracing the paradigm shift taking place at UMW. This required that additional practices be implemented to further support the changes taking place. This included re-evaluating faculty hiring decisions in light of the emphasis on teaching and learning that was being realized, as well as considering departmental changes within the college. Once again, Dr. Jenkins was a critical leader in these changes and credits the Dean for his leadership and for supporting the creation of a new department:

> What he realized is that he needed to consolidate the gains we've gotten in undergraduate education. I've been advocating for a long time for this to be a different thing. Then I advocated that the only thing that's not going to go away easily is a department. He got behind it 100%.

Discovering that there were no formal policies or regulations for making a new department, only for the elimination of one, they stated to make preliminary plans to make it happen. Presenting it to the rest of the college was the next step and Dr. Jenkins was uncertain about the response that the college's faculty and staff would have in

regards to their idea. What she discovered, even surprising to her at the time, was that there was widespread support:

> We went around this table, and every single person said, "Yeah. This is a good idea." The most vocal opponent, previously, agreed, "Oh yes, it's a great idea, and we should call it the Department of Teaching and Learning because that's what it will be." It's just like you throw the idea around enough, and people finally think, "Yeah…It's a good idea."

It was from here that the new department was born and Dr. Jenkins was appointed by the dean as the first chair despite her original inclination and constant insistence that someone else should take the helm:

> He just managed to make it happen, and twisted my arm in really bad ways, because I was advocating strongly (for the new department). I felt we needed an external person, but he twisted my arm…until I just couldn't say no. I said yes, and so that's how we're here.

The existence of this new department has been a critical structure in the college that has significantly supported the paradigm change taking place there. "The department I get to work in is extremely unique, Mariana Segura acknowledges as she reflected on her experience as a tenure track faculty member in the new department: "Though I know that there is a focus on teaching and learning in pockets elsewhere, our college has gone so far as to create a department." Lauding the college for "…actually putting their money where their mouth is," Thomas Roselle confirms that the department was a bold way for the college to unequivocally and publically demonstrate their commitment to the learner-

centered paradigm. It also, he noted, validated that professors can be "…rewarded for teaching well and for conducting systematic investigations of the impact of the changes they've made." "It grew into this group," Dr. Jenkins said as she pointed to the new department space that could be seen through the conference room window, "A group of amazing people. We've got PhDs, tenured track faculty, and we've purposely chosen them to emphasize teaching in their work."

The space that this department has made available, both physically and philosophically, has provided an important place where faculty can collaborate with others in their teaching as well as their research while concurrently supporting each other in the difficult work that takes place there. As a tenured senior faculty member in the department, Dr. Clowe has found the collegial atmosphere there to be an important place to continue her work in this emerging paradigm:

> There are a lot of people that kind of roll their eyes when I start talking about education. I wouldn't say there is universal acceptance at all, but at least here, this is kind of a safe community of like-minded people. It made it possible, once we started being able to hire more teaching professors. We made sure we hired people who had that same mentality.

Teaching professors are another unique structure that has supported the paradigm shift in the college and will be discussed with greater detail to follow.

Although the department is still in its infancy, Dr. Jenkins and her colleagues have ambitious plans to continue to grow while simultaneously honing their craft and inviting others in the college and beyond to join them. In addition to providing a home to

learner-centered faculty, it also serves, as Dr. D'arcy described it, as a "visible sign" at the institution. It is a place of impactful teaching and scholarship that can model practice for others who have not yet embraced the leaner-centered paradigm. As the department continues to grow, Dr. Clowe has noticed that there have been some new faculty invited to join them, an opportunity, perhaps, to further influence the teaching choices of their colleagues:

> There are others who are being folded in, but they don't actually teach much in the way of active learning. They have been asked to join the department, I think, to help convert them. It is maybe a subversive way of trying to convince them that there are good things to be done here.

Faculty positions. Though there are some tenured and tenure seeking faculty in the new department of teaching and learning in the college of science, the largest group of department members, by far, are teaching faculty. Holding the same advanced academic credentials as their contemporaries throughout the institution, this group of faculty is hired with different expectations than their colleagues holding other faculty roles. Even though other institutions may refer to these teaching focused academics as instructors, academic specialists, permanent instructors, or adjuncts, and this was recently the case at UMW as well, the teaching faculty designation in the new department was a purposeful initiative in the college of science.

As they continued to focus on teaching and learning, once again Dr. Jenkins, with the support of the college's dean, introduced the idea of the new title and rank as a way to recognize the hard work and extensive contributions of the non-tenure track faculty.

Already supporting the research faculty in their work as well as the growing teaching needs at the college for quite some time, these classroom instructors were a specialized group of faculty who were dedicated to the learner-centered paradigm and introducing innovative teaching techniques throughout the college. Dr. Jenkins shared a bit of the history behind the position and the impetus for the new title:

> We didn't use to have any...In fact, the university didn't have any teaching professors, but we had research professors which are non-tenure track professors who are on research grants, and they get space and they write. What we wanted for sure was the teaching professor who would mostly teach.

Driven by the need to provide more undergraduate classes as well as courses congruent with learner-centered pedagogies being offered throughout the college and institution, teaching faculty have promotional opportunities from assistant, to associate, to full professorships in teaching. The position also satisfied the need for scholars in higher education to contribute to the literature of the learner-centered movement. As an administrator in the center for teaching, with a lot of knowledge of the learner-centered paradigm and related practices, Dr. Rosselle was really interested in these new positions. “I think one thing that's really important is to create faculty positions that are devoted to, basically, the scholarship of teaching and learning in their discipline,” he told me.

Dr. Goodman, a very well respected faculty member in the college, embraced the title when he arrived at UMW and felt validated that his work and expertise as an educator was being recognized. Though he had tenure at a previous institution and had been offered a tenure track position at UMW, he has rebuffed them, finding a home in the

new department and in his classrooms that satisfies his professional and personal needs. Teaching faculty are not simply relegated to the less appealing introductory courses but instead are allowed to grow as teachers, as scientists, and as researchers. He explains his thoughts about his position and why he is happy to be serving the university and his students in this role:

> Everything about what I wanted, in terms of having teaching be important, having student learning be important, it was reflected in this position. For me, it mattered that the position was both teaching this foundations class and some other classes. I've thought that how I interpret these teaching professor's roles is as sort of an elite teaching unit.

Despite being a somewhat unique role in UMW, with few comparisons across higher education, Dr. Goodman posits that the idea of teaching faculty fits in well with the variety of faculty types that a large, public research one institution like UMW already has:

> I think that an institution that specializes in having clinical faculty and a medical school, or research oriented faculty who don't do much teaching, teaching of undergraduate classes, that's perfect for teaching faculty. They allow them to specialize in a way that allows them to do better at the thing that they do…if you just had everybody being rewarded by this institution for their research, you end up with neglected undergraduate education.

Though teaching is one of the main responsibilities of the teaching faculty, one participant told me that they are assigned five courses throughout the calendar year, the

culture of the department and the requirements for the position necessitates that they participate in all aspects of the college. This negates any attempts to view them as second class institutional citizens and, as regular members of the various academic departments that represent their particular disciplines, teaching faculty do not report feeling as if they are working on the "margins" like many non-tenure track faculty find themselves. Although they are on nine-month contracts which, one participant acknowledged, saves the institution money on salary expenses, the environment and role differs significantly from those that many non-tenure track faculty find themselves occupying in the modern university. Unlike many contingent faculty in higher education who are on renewable contracts each year and are often not provided with space and other benefits that validate their role in the university community, teaching professors at UMW have much more stability with five year contract terms and dedicated office space on par with tenured and tenure track faculty.

As a result, the participants in this study repeatedly report feeling respected by colleagues as both scientists and as experts in teaching. They value and are aware of the fact that they are allowed the space to do the work that they feel called to do and are appreciative of the respect that comes with being referred to as a professor in higher education:

> The degree to which I feel I'm allowed to do all the things that I care about, which is work on committees, which is to write, and do my scholarship, and have my freedom. In some ways the same things that I had as a faculty member in (a previous institution) with tenure, I have here.

“It still leaves me inspired to do the scholarship,” one participant tells me, “A, because the culture is becoming very supportive of it, but B, because we value it. We talk about valuing it. I can see how it's synergistically relevant for me and what I do.” As such, teaching professors may have research agendas in their area of science, in the scholarship of teaching and learning, or in something that bridges the two. To Dr. King, this has helped her colleagues at the college and throughout the university recognize that, “We're actually doing something real here and it is research as well and it is the scientific practice as well.”

Additionally as the “expert” teachers in the college, each of the teaching faculty are expected to contribute to the growth of effective teaching in the college and the continued development of the learner-centered initiatives taking place there. Many of the teaching professors, for example, have been asked to collaborate with other traditional faculty colleagues and assist with the professional development of new tenure track faculty in the college. Dr. Goodman shared experiences that he has had in this role:

> For instance, we have pre-tenure mentors, for new tenure track faculty, someone is assigned to mentor them in their research and mentor them in their teaching. I get to mentor people in their teaching in the tenure track. I'm not sectioned off where you can't do that. As a result, I can feel part of the department. I also think that is a good role for a person like me, because in a second I can diagnose whether one of my colleague's graduate seminars is failing for X, Y, or Z reason. They don't necessarily get it so quickly.

These mentorships have served to not only involve teaching faculty in the important work of mentoring new faculty, but has, importantly, been a valuable opportunity to introduce a new generation of tenure track faculty to skilled teachers in their discipline who are able to orient them to the learner-centered paradigm and effective teaching and learning techniques. This has been a valuable college policy and structure that has further contributed to the adoption of learner-centered teaching practices.

Available training. Preparing faculty to be able to incorporate leaner-centered teaching practices is an important consideration when embarking on significant paradigm change and it has been over time that UMW has created a number of structures and policies around training for faculty. When the large active-learning building, which will be discussed in greater detail to follow, was constructed, Dr. Jenkins remembers that, "they had to work really hard to get people into the building initially." With 15 active learner classrooms in the new space, the number and sheer size of the building and rooms far outpaced the demand. As a result, faculty were originally randomly assigned rooms in those spaces consistent with the regular classroom assignment process managed by the registrar's office. This random process challenged many faculty who went from traditional lecture halls to something very different. Dr. Jenkins recalls a particular colleague who left class each day in tears when she was first randomly assigned to the space. "She cried for 2 weeks," she told me, noting that this particular faculty member would probably tell me that herself when we met for our interview, "When she got put in one of those rooms, she didn't know what to do."

Though very difficult for many faculty, the policy of randomly assigning faculty to the active-learning classrooms was often successful in organically bringing about some changes in faculty practice and forcing teaching decisions. As many participants recognized through their own experience in active-learning rooms, the spaces themselves lead to learner-centered teaching practices. Even those that entered with little experience or interest in changing how they teach or how they interacted with the students are almost forced to, the physical structure and room attributes and the effect that they have on students demands it.

While successful in many ways, and an effective way to have the building in use throughout the day and evening, more efforts have been put into place to more formally train faculty. As Dr. Goodman has witnessed, even a cursory orientation can help faculty to not only become more comfortable in these spaces and in using some new teaching techniques, but will certainly help them be more successful:

> As long as you have a little education of how faculty...teaching in these rooms, know what's to come, know how to use the room, know what's possible. It will still be somewhat of a shift, but you'll get people, first the innovators joining in to that space.

Over the course of the last several years, the participants in this study, especially those who have been involved in the administration of the college or in the center for teaching on campus, have created new structures and initiatives that they feel have been successful with their institution's faculty. As a critical mass of faculty are exposed to the paradigm and the practices that support it, the more that other faculty have started to take

notice. As Dr. Rosselle explains, his experience in the faculty learning center has shown over and over again that the successful learner-centered work of the faculty who were early adopters starts to positively influence the teaching choices of their colleagues:

> At the (University of the Midwest) more broadly, I think what you can see are pockets of uptake of the more active-learning paradigm. I almost think it proceeds by a kind of contagion model. One person will get the disease, like you, and you'll go back to your home department, and you'll infect other people.

How this training is delivered is an important consideration and some valuable observations by Dr. Rosselle and his colleagues in the Center for Teaching have resulted in trainings that are sensitive to and take into consideration the faculty culture in each of the schools and colleges as well as at UMW overall:

> One thing we consistently found was that faculty want to learn from other faculty members. They want to learn about teaching from other faculty members. They want those faculty members to be as close as possible to them in a disciplinary sense, even in a physical sense, somebody just down the hall. They want to learn from faculty who…like a scientist wants to learn from other scientists, and he might want to learn from other life scientists. I've had geologists say to me, “I can't learn from a chemist. That's totally different. This is earth science. Our students are different; our materials are different. What works for them won't necessarily work for us."

Physical facilities. When the participants in this study were asked to identify the policies or procedures that have had the most significant impact on their teaching, one

common influence was identified over and over again. Though each individual had been exposed to the learner-centered paradigm in different ways, and each had unique experiences and motivations for adopting the philosophy in their work, the active-learning classrooms and the building that soon followed was repeatedly credited with having the most significant impact on their work. This was certainly the case with Dr. King who quickly identified that in her own experience and from her view of the institution, "…the new building and classrooms have had a big effect and I think that's kind of spread through the university and getting more departments interested in teaching in those rooms and changing the way that they teach."

Understanding the history behind the building provides important context for what followed and further supports the findings about policies and structures discussed earlier in this chapter. Influence and advocacy from key leaders on campus and at the board level was instrumental in the conceiving and eventual building of a physical edifice that is now a significant, living monument to the learner-centered changes taking place at UMW.

The two active-learning rooms that were built in the early phases of the learner-centered movement and discussed previously, were extremely successful and laid the groundwork necessary for the start of paradigm change. With overwhelmingly positive feedback from students and faculty alike, as well as documented educational outcomes from the research studies that were completed, there was a desire by leaders on campus to scale up what they had done with these pilot rooms. Once again, a series of fortunate events came together as an older building on campus was slated for demolition at the

same time that empirical research was supporting the learner-centered experimentations taking place. Located in a high profile location, at the crossroads of their large, picturesque campus, staff and faculty across the institution were anxious about what was going to replace the older, rather unappealing building. Dr. Joseph recalled the early stages of the process and the role that critical leaders played in the eventual building that was constructed:

> We had a very strong Associate Vice President in our facilities and management area who knew the President well, knew the Provost well. He sold them on the idea that we needed another building to replace the old building here but it shouldn't be something that is replicating what is on college campuses for decades, if not hundreds of years. The President and Provost got very strongly on board with this. Our Board of Regents got on board with it.

With support from the upper echelon of the institution and governance supporting the new building, the institution went forward with the planning and construction of a state of the art, 70 million dollar learner-centered facility that would quickly become a pivotal part of the undergraduate learning experience at UMW. Circumstances on campus again aided in the development of a learner-centered culture on campus that extended beyond the college of science and involved faculties from a variety of schools and colleges across the institution:

> You had a number of interesting forces that all came together in 2008 when they started building the building. In 2010 it had been completed. Also at that same time, in a serendipitous way, in the fall of 2010 when we opened the building a

> couple of other buildings on campus were under renovation at that time, involving our humanities and social sciences. This space was a nice opening opportunity for them, besides it being a nice place for STEM education to take place. You had this miracle collection of forces that at the same time provide these opportunities for faculty to use the space.

Though there were many in the faculty who were uncomfortable and reticent to teach in the new building, it did not take long for there to be a critical mass of faculty who were making meaningful changes in their courses and the operating philosophies that were guiding their teaching decisions. The space itself was a significant, literal structure that challenged old paradigms and practices and naturally supported new ones. Dr. Goodman has come to strongly believe that the physical nature of the classrooms, the seating arrangements for small groups of students, the white boards that are available for each cluster, and the technology available to support learning, leads to a natural, organic evolution in teaching practices:

> Any place that does a similar kind of large-scale building design will get, this is where I would argue, will get the change in practices, because the rooms are a selective force. They are an evolutionary force on the teachers in them, because you cannot lecture in there and feel it is a good room for that.

Participants also report that students taking courses in active-learning classrooms also react to the space and act differently with their faculty and with their classmates, the physical room set up sending messages that they are about to have a different experience and that they are going to be active participants in their education. This further

encourages faculty assigned to these classrooms to respond differently to the educational process and the learning needs of their students:

> You know there's something, students just waiting to talk to each other. It's so built on that premise that essentially you want to give it to them, you want to turn it to them to talk to each other, to work together.

Leaders were purposeful and intentional in all aspects of the building's construction and participants point out that even little details send intentional messages of what the building is meant to be and what is supposed to go on there. The goals associated with the 15 active-learning classrooms become almost immediately clear, but more subtle efforts were also thought of and executed well. Throughout the building's hallways, for example, comfortable seating is clustered in small groups with an accompanying white board adorning the wall to provide additional learning opportunities and to encourage group work. Students throughout the day can be seen in small groups working on problem sets, discussing class concepts, or working through complex theories or formulas on the board for their classmates. Education and learning, these spaces make clear, does not only happen in a classroom or in the presence of a faculty member. Instead, this is a building where learning can and should be taking place all over, the learner-centered experience reinforcing the idea of peers as legitimate sources of knowledge.

Another intentional aspect of the building was the inclusion of student service offices and resources, including a one-stop department providing a number of services for

students in a single convenient location. At the intersection of campus, planners, Dr. Jenkins stated, realized that most students pass by at some point in the day.

Policies too were crafted to encourage use of the building and its resources and students have access to the spaces from early morning until late evening. It is not surprising then, that Dr. Clowe has noticed that the building is a frequent stop for campus tours bringing prospective students and families around the UMW campus:

> The other thing that has really worked in our favor is that there are tour guides that take people through campus year round. Some parts of the year are busier than others, when high school seniors and juniors are taking campus tours. The tour guides always take them to (the new building) and bless their hearts, whoever has trained them, they all say, "You are going to have classes in here. You are going to love it. Here you are going to work with your neighbors and yaddy yaddy yada." So they give this spiel and I hear dozens of these through the week.

Highlighting this learner-centered approach to students and families even prior to enrolling not only introduces them to the emerging paradigm at UMW but also serves as a stark contrast to the traditional instructor-centered paradigm that so many other large, public university still operate under. This does, some argue, provide a valuable contrast for students to consider when making their college selection decisions.

Over the last five years, the learner-centered building has been a significant structure that has greatly impacted the learning experience of students on campus and has hastened the paradigm shift that has been taking place there. “Now it's at the place where over 1/3 of our undergraduates every year take courses in these active-learning classes,”

Dr. Joseph marvels, acknowledging that this, "...is a tremendous number of individuals." Just as importantly, however, he finds that a building like this sends important messages to anyone working or studying at UMW or exploring the culture there:

> What they do is they are very powerful symbols of undergraduate reform. In other words, when the university puts that kind of money, and has that many faculty teaching in that space, it's making a statement. For us it's undergraduate education, as much as graduate and professional education since that building is mostly for undergraduates. It's a monument, or testament, to that kind of commitment.

Conclusion

As I start to pack my bag for my flight home later that day, I cannot believe how quickly that last four days have gone. Mentors repeatedly promised me that the data collection part of the dissertation was the most fun aspect of the process and I have found that this has been true for me as well. Being able to leave work behind, both physically and mentally, has allowed me to concentrate on my research and immerse myself in the UMW campus. Whenever I had free time, either after interviews or in the early morning or late evening, I wandered campus, taking in the sights and sounds of campus life. At my own institution, I have always found that life on campus after business hours was a very dissimilar experience and this was no different. As such, I spent many hours in common student spaces like the student union, the library, a dining commons, and even Starbucks, writing notes, observing those around me, and taking in the artifacts that, intentionally or not, are present around campus.

Checking around the hotel room one last time to make sure that I am leaving with everything I brought with me, I am extremely grateful for how willing my participants have been to not only be a part of the study but to open up and share their experiences with me. Dr. Jenkins, I think, has been an invaluable gatekeeper, not only graciously providing me physical space in her department to retreat to when I needed to complete work, but helping to coordinate interviews with people across campus who would be able to provide valuable insights into the learner-centered movement there. Each person that I interviewed offered a unique perspective that helped me better understand the learner-centered movement at UMW.

In one of our first email exchanges, Dr. Jenkins told me that a department meeting was organized for later in the week I was planning to visit and if my schedule allowed, I was welcome to attend. Additionally, if willing, she asked if I could present an informal seminar to the faculty. Needless to say, there was no way that I was going to miss an opportunity like this even if I had no idea what I could possibly share that they did not already know. Regardless, I readily agreed and made sure that my travel arrangements would allow me to participate.

The regularly scheduled department meeting includes everyone in the new department, administrative support personnel, post-docs, and the faculty, a particular part of the culture at UMW that Dr. Jenkins told me about when we met informally over coffee. UMW, she told me, is an inclusive institution where department meetings are favored over faculty meetings. Looking around at many of the faces I was able to meet

over the last few days, I see that everyone I met from the department either as participants or through other introductions during my visit is there.

Other than my cohort mates at UMass Boston and my committee members, this is the first presentation I was making on my topic. Though I was very nervous to be sharing my thoughts and early research with such an accomplished group, they were engaged with my presentation and the conversation we had after was a wonderful experience that provided additional answers and even a few more questions.

Even though I was excited to be going home, I felt a bit sad leaving the group and the UMW campus. There are some great things taking place at this school and this department, in particular, is a great example of what can be done to support meaningful paradigm change at the institutional and individual faculty level. Regardless, I had a full schedule at work the next day and I mentally created a to-do list in my head as I made the return trip to the airport.

A few days after my visit, Dr. Goodman emailed me some additional thoughts he had about my presentation and the discussion that followed. Using a simple biology concept, his reflection perfectly captures the great opportunity and the great challenge that exists with the adoption of the learner-centered paradigm:

> A last thought that came to me this morning is related to the idea of microevolution (slow change) vs. speciation (big change) or of tweaking vs. transformation. We can tweak things and get small changes, changes which can build in importance over a long time or can be reversed by our neglect or changed attention to the next tweak of the week. But to get transformation -- think tadpole

to frog -- we need *decay* or to give up something substantial (in the case of the tadpole, the tail). In biology we see this a lot -- the sacrifice of something in the body to make another thing possible. Perhaps it is true in institutional transformation, too. And sacrifice, as we all know, is difficult.

Case 2 Narrative

Moose? Was that a sign warning drivers to look out for moose? At first I assumed I was seeing things, the unintended consequence for hitting the road later than I had planned and was feeling the effects of the long drive and the darkness that was quickly descending upon the area. Besides, I thought with some confidence and brushing aside my alarm, this is not an area that I generally think of as full of moose. Fatefully, just as I was convincing myself of my error, an oversized yellow sign appeared clearly imploring speeding, tired drivers like myself to pay attention and look out for moose. This was a first. Tightening my grip on the steering wheel, I put on my high beams for the rest of my drive along the fairly desolate road and obsessively scanned the woods and roadway for the huge, automobile crushing animals.

East Coast State University (ECSU) is the site of my second case study and I was making the long commute to campus to collect additional data. I had a couple of interviews scheduled with faculty and wanted to spend some unstructured time on campus. Though I had previously visited in the spring and had a chance to interview two staff members in the university's center for teaching as well as tour their active-learning classrooms, I was anxious to spend some additional time there to explore the campus some more. With my visit to the University of the Midwest recently completed and fresh

in my mind, I felt better prepared to capture the campus' culture in ways that I came to realize I was not ready to do in the spring. I also had recently completed a couple of online interviews with East Coast State faculty members and what I learned from them about their experiences helped provide additional context about both the university and faculty culture.

East Coast State University is the flagship university in the states' public higher education system. Located in a picturesque, rural area of the state and surrounded by a number of private colleges and universities that further contribute to the area's robust education and arts culture, ECSU enrolls around 23,000 undergraduates and just over 6,000 graduate students. Spread over nine schools and colleges and employing over 1,300 full-time faculty, ECSU is a research intensive university with a significant amount of supported research activity.

Moose warnings aside, the drive to the large ECSU campus is a relatively uneventful one and after miles of rolling two lane streets, the town and university seem to materialize out of nowhere. Athletic fields and off campus student housing frames the campus and large multistory residence halls and academic structures reach high into the sky, a stark contrast to the surrounding community and the scenic valley it is located in.

With a more critical set of eyes ready to observe the institution, faculty, staff, and students, I drive around the university grounds to get a better sense of the entire physical footprint before taking some time to walk around myself. As I mentioned above, I like to visit colleges and universities in the evening. I have always found that there is a different feel in a campus community afterhours and what you observe during the quieter moments

is what can too easily be overlooked in the hustle and bustle of a busy daytime campus. This time was certainly no different as I park in the garage and slowly meandered through the sprawling campus. Staff and faculty who must have been working late could be seen hustling to their cars after a long day and students were making their way in small groups towards residence halls, dining facilities, the library, and various athletic and recreation activities that were taking place on the fields that I had just passed.

As I continued to work my way through campus, several chalked sidewalks caught my attention and I finally stopped outside of the student union and used the light on my phone to see what they said. "Million Student March" was written in bright chalk letters letting students know that the rally was scheduled for Thursday afternoon. Part of a national day of action taking place at colleges and universities across the country, the chalked call to action reminded the community that free public education, the cancellation of student debt, and a $15 dollar campus-wide minimum wage was the focus of the rally.

This was just one example of the student activist spirit evident on campus. On every bulletin board I saw, among signs advertising the typical lecture series, student programs, and new course offerings were a number of advertisements for opportunities to get involved in a plethora of student activism related initiatives. "Activist Jobs—Work for Reproductive Rights" screamed one florescent blue sign while the ECSU chapter of Amnesty International implored students to "Let's Stand Up for Human Rights" on equally bright yellow. Talking with colleagues familiar with ECSU after my visit, I came

to find out that the campus has always been known for having a healthy amount of student activism.

After a restful night, I arrived on campus early the next morning to continue my walking tour and to spend some time in the new active-learning building that was recently constructed. Making my way around campus at this hour, the few sleepy students I did see were greatly outnumbered by the maintenance and facilities staff who were crisscrossing campus attending to the daily upkeep that a campus of this size requires. Walking in the full light of the morning, I am struck by how much construction is going on around me. I pass one renovation project while looking at cranes in the distance constructing another new facility; only two of the six major projects currently taking place there. As I had heard, but was now seeing for myself, ECSU has experienced a lot of growth over the last decade. Newspaper stories I read after my visit estimate that spending on building projects is in the billions.

After a quick visit to the library and the learner-centered classrooms there, I make my way to the new active-learning building among an increasingly growing group of students who I come to realize are quickly heading to their early morning classes in the same building. As if a required uniform, most of the students are proudly wearing ECSU clothing, opting for sweatshirts or fleece in a cool, cloudy, but still very comfortable November morning. A small cafe is conveniently located on the lower level in a large lobby with tables and seating of all sizes providing a comfortable study and socializing space. Pulling a water bottle from my coat pocket, I sit down at an open table to spend some time observing the surroundings and preparing for the day ahead. Looking around,

it seems like a majority of the students are making a straight line for the waiting baristas to get their caffeine fix before class, the aroma of coffee and toasting bagels too appealing to pass up. Looking around from my place in the lobby, the building is beautiful and is so new that it gleams as sunshine pours through the large floor to ceiling windows, just one example of the commitment the university made to construct an environmentally conscious building.

With the first classes of the day starting, the lobby thins out and I walk through the building, noting large plasma screens on the wall set with a loop highlighting everything from upcoming speakers to undergraduate research projects. The wide hallways of the building lead to a number of classrooms types, some more congruent with the learner-centered paradigm than others. Large active-learning spaces on one side of the hall are joined by more traditional tiered seating rooms as well as flexible classrooms of all sizes filled with chairs on wheels. The classrooms are broken up with additional informal seating areas meant to provide places for students to meet as small groups or to study independently before or after class.

The highlight, of course, is the large active-learning, SCALE-UP classrooms and I have an opportunity to enter an empty room and look around. The brightly green painted rooms are filled with tables accommodating approximately nine students, white boards at each station with cameras pointed at each, and a technology station for the faculty to operate. Though I have seen several of these rooms before, I never cease being inspired about what these rooms represent and what I know is able to happen in them. I can see an occupied room across the hall through the glass and groups of students are having an

animated discussion as the faculty member walks around the room, checking in with one team before moving on to the next table.

Enthused by what I see, and looking forward to my upcoming interviews, I head for the stairs so that I can explore the upper floors of the building and the classrooms and academic departments that are housed there. As I make my way there, I walk past a huge, ornate display for the University's Distinguished Teaching Award. It is fitting that this longstanding award is proudly displayed in a building that recognizes and validates how important learning is at the university and I stop to read it and see which faculty have been recognized with this prestigious honor. It reads:

> The Distinguished Teaching Award honors university teachers who have been nominated by students and alumni as demonstrating extraordinary commitment to teaching and student learning at (East Coast State University). This award may be bestowed only once in his or her lifetime. Listed here are the exceptional individuals who have received the award.

Looking over the names, faculty from all over the university have been identified by students as being influential teachers and I come to learn that this is a particularly meaningful honor to those who are singled out in this way. The websites of many academic departments, for example, proudly highlight the colleagues who achieved this award through both press releases and special profiles.

With my first interview only 30 minutes away, I head up the stairs to check out the rest of the building. Snapping a few pictures on my phone so I can remember all the

little details I am seeing, I head out, campus map in hand, to find the building where I will be conducting the first interview of the day.

Exposure and reaction. At East Coast State University, a faculty member's first exposure and subsequent reaction to the learner-centered paradigm was an important phase in the adoption process for the participants in this study. With very diverse academic and professional backgrounds and biographies, each of the scholars interviewed here were introduced to the paradigm and related practices in equally unique ways. Though half of the participants are senior academics who have been in the academy for many years, and the other half are junior faculty who are at the start of their academic careers, this initial exposure to the paradigm created the impetus for each faculty member to first commit to further exploration, to eventually adopt the paradigm, and to finally institute changes in their teaching.

As the products themselves of modern higher education, each of the participants experienced the instructor-centered model as students and thrived in the structures and expectations that are consistent with this paradigm, a practice that often focuses more on what is taught and who is teaching rather than what is learned and who is learning it. As such, each of the faculty interviewed here readily adopted this traditional and long-standing philosophy and mirrored the same practices that they were most familiar and comfortable with when making their own teaching decisions.

When finally exposed to the learner-centered paradigm, regardless of where they were in their career, critical moments of cognitive dissonance were created and previous ideas and ways of knowing were challenged in very important and meaningful ways. So

jarring was his introduction, Carl Whetmore, a tenured senior faculty member, was quick to recall his own experience and the details that surrounded his first revelation. "I think I can actually point to a pretty specific time almost down to the day and certainly week," he told me.

In many ways, the STEM field has been on the cutting edge of the learner-centered paradigm and it is likely one reason why all of the faculty who have participated in this study hailed from science or science related backgrounds. Unlike their colleagues in many of the other disciplines at their institution, the sciences, especially at large colleges and universities, have often been home to many of higher education's biggest classes. Satisfying the general education requirements for the university as well as providing the introductory courses for their own majors, has resulted in large lecture based classes that research has repeatedly found only satisfies the learning needs of a small percentage of their student body. All too often, this has greatly limited deep learning and has ultimately resulted in the disinterest and attrition of many potential scientists.

In light of this environment, the STEM community has long recognized that traditional methods of instruction were not effective for many students and a lot of attention and resources have been spent exploring alternative methodologies and paradigms (Committee on Undergraduate Biology Education to Prepare Research Scientists for the 21st Century & National Research Council, 2003). Substantial funding from the National Science Foundation (NSF) has been a significant factor in driving active learning innovation, and emerging from this work has been a growing appreciation

for how effective a learner-centered approach to undergraduate education is and the field has made significant contributions to the knowledge, growth, and adoption of learner-centered practices in the sciences. SCALE-UP, for example, with support from the NSF and a number of other companies and organizations, originated in physics and it has been these colleges and schools of science that have often been the first and most influential advocates for paradigm change at their larger institutions.

It was in that context that Dr. Whetmore was first introduced to the emerging paradigm and to some of the cutting edge approaches to science education that was taking place around the country. Having received a Howard Hughes Medical Institute grant for undergraduate teaching enhancement in the life sciences, Dr. Whetmore and a colleague in a different science department at ECSU attended the weeklong Summer Institute on Undergraduate Education organized by The National Academies. "I went in pretty skeptical," he told me. As a senior faculty member with many years of experience, the proposed shift in both paradigm and practice challenged his tightly held beliefs and his longstanding way of doing things:

> The first two or three days, I said, "You know, this stuff I'm not sure I believe in it." By the end, I was convinced. Over the course of that week, I became convinced that evidence based instruction, active learning, collaborative learning, all that good stuff, peer-to-peer interactions; it really was worthwhile, worth doing.

Being off campus away from the day-to-day rigors of an active academic career and having the unique opportunity to immerse fully in the topic, provided the perfect

atmosphere for learning and reflection on teaching. Modeling the very techniques and approaches that they advocate that faculty adopt in their own work, the institute provided Dr. Whetmore and his colleague with the right mixture of challenge and support coupled with pertinent information about the learner-centered paradigm and methodologies:

> The focus of what is done at the Summer Institute for Scientific Teaching, one of the important parts to convince scientists especially is they show you the evidence. You know, there's plenty of studies out there that show that various things work, different pedagogies work. I believe the evidence. That's what really convinced me.

Dr. Whetmore and his campus colleague left this experience inspired and ready to create a new course congruent with the learner-centered paradigm, just the first step in transitioning from skeptic to believer, eventually teaching exclusively in this model and later contributing to the expanding scholarship on teaching and learning:

> Pretty much from that point on, I just switched. I went from being more a standard…sage on a stage kind of instructor to one that it's much more now students active, students being the learner focus, not the instructor being the teacher focus. It was that particular meeting and I guess that was probably five years ago.

In addition to facilitating and contributing to a growing body of empirical evidence and scholarship, institutions that have started to adopt meaningful paradigm change have been willing to share their experiences with others in an impressive spirit of collaboration and collegiality. SCALE-UP, for example, provides an online space that

offers a wealth of resources and information for anyone interested in learning more about the program or other issues related to SCALE-UP or the learner-centered paradigm. Institutions across the world share detailed information about the SCALE-UP related initiatives taking place on their own campuses and often publicize contact information for their staff as well as details about their classroom designs, technology, and other related initiatives.

As a forerunner in the learner-centered movement, the leadership and faculty at the University of the Midwest are often asked to speak about their change process experiences and the outcomes that they have been able to achieve as a result of their increasingly well-known adoption of the a learner-centered paradigm and the construction of their active-learning classroom building. Interestingly enough, it was at a Dean's meeting where Ryan Michaelson was first exposed to the learner-centered paradigm and the ingenuities taking place at UMW:

> I was at an Arts and Sciences Deans meeting within a year of when I took the job here, and the Dean…at The University of (the Midwest) gave a presentation of which he did a video. (Jane Jenkins) was the star of that video and it was their demonstration of a TBL (team based learning) classroom. This was a high tech version which would drive the scale up as if on steroids because it was implementing all these high tech things that could be done.

Preceding his arrival at ECSU to assume the role of Provost where he would eventually become an important learner-centered leader there, Dr. Michaelson left the meeting and the UMW presentation with a number of questions as well as a lot of interest. "That's

when I really got into the literature of backward design and so forth," he told me, sharing that this culminated in a period of research and discussion with colleagues at his institution as well as across the country. While much of what he read and heard about continued to further pique his interest, the persistent conflict between paradigms still existed. The practices of the learner-centered paradigm, he confessed, were "…not natural to me." A long held commitment to content and other well-known roadblocks were also present and needed to be grappled with and eventually reconciled:

> As much as I understood the benefits and so forth, thinking about how you teach a biochemistry course that's in a sequence of courses where the kids that come out are expected to know the stuff to get into the next one, and a lot of them are going to take MCATs and are expected to know a certain body of knowledge. How to do that was not at all clear until I actually started working on the design.

Putting pen to paper and plotting out an actual course allowed him to see how he could reimagine and design a course in a way that would be more meaningful for students, not only helping them master the information necessary for a demanding curriculum and standardized exams, but would help to do so in a much more efficient way. After doing so, he told me that, "I bought into it hook, line, and sinker."

One similar trait that all participants had was a sincere interest in teaching undergraduates. While Dr. Whetmore and Dr. Michaelson are accomplished scholars in their disciplines and had obtained tenure status earlier in their career, their commitment to teaching and learning was something that was always present throughout their career. It likely predisposed them to be open to the information they were hearing and to think

about the opportunities while other colleagues dismissed what they hear outright, only seeing the difficulties that these changes brought about.

Similarly dedicated to teaching, Lina Shamma, a lecturer at ECSU recalled that this commitment is why she decided to pursue her terminal degree and why she took advantage of any opportunity that her graduate program provided to get in front of students:

> I've always wanted to teach. I actually got my PhD with the intention that I wanted to teach at the college/university level. I fell in love with research along the way. I did a lot of TAing when I was a graduate student. I was in the preparing future faculty program at my graduate institution, and would seek out things like taking on a high school student for the summer.

It was while participating in the preparing future faculty seminar that Dr. Shamma was first introduced to the leaner-centered paradigm:

> They had teaching workshops and people who came in and said, actually from an institution that you might be familiar with (UMW), people would come in and do workshops and say, "You know, I teach 500 intro biology students. Here's how I do it and it is not lecture."

Committed to teaching and to the learning outcomes of her students, Dr. Shamma personally and professionally connected with what she was learning and found a synergy between the practices of the paradigm and the things that she was intuitively doing:

> I found, and I think other people have had this experience, that a lot of what made sense to me and what helps students learn was really active learning. Then you

see kind of the vocabulary. Then you see strategies and you go, "Oh well that's why I designed some of my multiple choice questions this way and others this way." It just gave the theoretic explanation for things that I was already trying to do.

For each of the participants, their early exposure to the learner-centered paradigm was a critical moment in their development as an educator. What they gleamed from these experiences and any additional background they gained from supplementary research they conducted would be built upon when all of them participated in a fellowship at ECSU that will be discussed in greater detail.

Policies and Structures

The learner-centered movement at East Coast State University is an emerging paradigm shift that is still in the early stages of meaningful change and the faculty and staff who participated in this study are some of the early adopters of the paradigm and the pedagogy that supports it. Representing different departments, and with a wide range of professional and personal experiences in higher education, the unique perspectives that they offered created a clearer picture of the complex way that faculty make teaching decisions. At ECSU, the most significant and influential structures and policies included organization and leadership, departmental influences, available training, and physical facilities. Each had an impact on the overall learner-centered environment at ECSU, as well as a positive influence on the teaching choices of those who participated in this study.

Organization and leadership. The role that leadership played at ECSU in fostering a culture for paradigm change and a climate of support for learner-centered practices was a critical component of their successful efforts thus far. When asked how ECSU has been able to make such meaningful change when so many other institutions have failed at similar efforts, Dr. Michaelson did not mince words when he unequivocally told me that, “First of all we had to have vision at the top,” a sentiment that several participants echoed as well.

Despite being a first-time Provost and a new leader in the ECSU community, Dr. Michaelson entered his position as the chief academic officer with a vision of how undergraduate education at the flagship university could evolve and the role that he and other campus leaders could play in this process. Having been previously exposed to the successful initiatives taking place at the University of the Midwest and already thinking critically about the paradigm from both a macro and micro level, Dr. Michaelson posited that a learner-centered approach to education could have a significant impact on the learning outcomes of students. Looking to his colleagues at UMW, Dr. Michaelson asked if they would be willing to share the video that they made about the learner-centered movement at their institution that had inspired him at the aforementioned Dean’s meeting. His plan was to use their piece as a way of introducing the topic and providing a successful model to his chancellor and new senior colleagues, recalling that, “When I got to (ECSU), one of my first meetings of the Chancellor’s Cabinet, I put it on the agenda and I showed it. I said, ‘We've got to do this.’"

Despite the significant challenges and costs that a proposal like this incurs, support for the new idea was quick and decisive. "And the Chancellor said, 'Yes.'" is how Dr. Michaelson remembers it, repeatedly crediting the Chancellor throughout the interview with having the vision and leadership skills to support a major initiative like this. This was, I was told, just one of several accomplishments the Chancellor earned while leading ECSU despite doing so during extremely difficult financial times for public higher education in the state and at the institution. As Dr. Michaelson recollected:

> This was 2009, this is when money was flushing down the toilet in terms of our budget, but he said, "We just have to do this. This has got to be priority." With (the Chancellor's) blessing I got the ball rolling in that very first year.

The first step in starting this process was to identify a group of colleagues from across the university who could help support the early stages of this initiative, a key stage in recognizing additional leaders at the institution who would ultimately be critical advocates for the changes taking place. Once in place, these leaders would, in the long run, be the creators of any new structures and updated policies that would further support the paradigm shift and enhance related practices:

> My first year as Provost we had the people in facilities planning identifying spaces and going out and going to (the University of the Midwest) and going to other places to look at spaces and design it. Second year as Provost they were building it out…

The construction of pilot classrooms not only provided the physical spaces for these active-learning courses to take place, but also served as an influential, visual notice

to the university community of the commitment that campus leaders had to the emerging learner-centered paradigm. Settling on team-based learning as one of the primary methodologies of the new paradigm, and cognizant that how faculty are introduced and exposed to the underlining philosophies needed to be intentional and well thought out, Dr. Michaelson knew that training was going to be eminently vital. To this end, he recognized the leadership role that the Director of the Center for Teaching and her team played in designing an effective structure and policies for recruiting interested faculty members and providing comprehensive training on the paradigm and related practices. All of the participants identified Kimberly Ales and her team as being early and ongoing leaders in the efforts to introduce a paradigm change. "I think the thing that I benefited from enormously was having the best centers for teaching in the country, he told me. "(Kim) was the one who implemented it," he continued. "I didn't tell her to do it. I just told her we're going to do this, faculty are going to need training, and she just did it." The training and preparation program they designed and facilitated and the positive effect it had on the paradigm change at ECSU will be discussed in greater detail to follow.

In addition to training, the leadership at ECSU recognized how important a serious and sustained assessment plan would be as they continued to move forward with the learner-centered initiatives on campus. Creating and supporting an assessment ethos, Dr. Michaelson notes, has been another important part of the culture change taking place on his campus and has been a positive influence on faculty teaching choices when they see the outcomes that are being achieved by the students on their campus:

> There's a third part that's been important to the momentum and keeping it going, and that is we also have a crack assessment team. We had the physical space and the leadership that prioritized that, prioritized building the physical space for it. We had the center for teaching to do the training, and we had the assessment team to be able to put together the data to show whether or not we're being effective.

For Dr. Shamma, the support and advocacy of leadership at ECSU, both at the greater university level as well as in her department, influenced her decision to apply for a fellowship to learn more about the leaner-centered paradigm and how she could implement changes in her own classes. All the missives she was receiving, both overtly and covertly, sent clear messages that the institution was serious and committed to meaningful change and this is one reason she got involved and why she believes the learner-centered paradigm has been increasingly successful at ECSU:

> You have to have an administration, and incentive structure that recognizes if there's a need, and takes into consideration both the investment on the instructional end and on the student end, and values, as I think (ECSU) does. I think this is one of the reasons it has worked at (ECSU). There's a Chancellor on down, sort of insistence that we will teach effectively. We need to figure out how we're better, or what value we add as opposed to a massive open online course.

With the success of the pilot rooms on campus repeatedly confirmed by their internal research and increased interest by faculty, there was a need for additional spaces and plans for a new building with several active-learning classrooms was launched. "In my mind I wanted to make this a signature of undergraduate education at (ECSU) and to

make active learning as a common experience," Dr. Michaelson shared with me as he takes a sip of his tea and sits back in his office chair. Back in the classroom teaching a TBL class and exploring new areas of research after stepping down as provost to allow an incoming chancellor the ability to choose a new senior vice chancellor, Dr. Michaelson is extremely proud of the accomplishments he and his colleagues were able to achieve in a relatively short period of time. Joined by leaders at all levels of the organization, they were able to initiate meaningful change at the institution and positively influence learning at ECSU and the teaching choices of faculty throughout the university as they started to focus more on learning rather than teaching. With even more classes being taught using learner-centered methods, and increasing demand for classroom space and fellowship opportunities, active learning, as Dr. Michaelson hoped, is very much starting to become a signature of the ECSU experience.

Departmental influences. In much of higher education, the academic department provides both the physical space and administrative structure to a group of faculty around a particular scholarly discipline. A physical and intellectual place for faculty, the department is often the setting where they come to know the institution, habitually seeing the university's structures and policies through the unique lenses of that particular unit. This is especially true at large, multifaceted organizations like ECSU where the academic department offers faculty and staff a smaller, more manageable home to work out of and connect with others. It often serves, in many ways, as a microcosm of the more complex university.

For the junior faculty participants in this study, the culture of their departments and the experiences and influences of their department colleagues and leaders played extremely persuasive roles in their exploration of the learner-centered paradigm, their choice to apply for the TBL fellowship, and ultimately the teaching decisions they made for how to best run their courses. For Dr. Elcik, the culture of her department and how that is made evident by what is communicated on a regular basis as being important and what is recognized and rewarded through evaluation, left an indelible impression:

> I don't know whether or not it's true, but the ethos in this department, the thing that they say at all the faculty meetings or that they like to talk about is that we pride ourselves in our teaching, and that we get better scores than everybody else in the university. Now, when I look at our scores I'm not sure whether or not that's true, but this is the stereotype that we have of ourselves, so when we actually go through our merit review process on a regular basis, teaching counts.

Even though she is in the early stages of the tenure track process and nurturing an active and robust research agenda, Dr. Elcik's teaching and the effectiveness of her classes in terms of learning outcomes is important and recognized, and something she considers when making her own teaching choices.

While departmental culture provides the foundation for the faculty member's evaluation and assessment of teaching choice, the influence of a chairperson, as the identified leader of the department, was one of the most influential factors of teaching choice. In Dr. Elcik's department, several faculty, including the department chair, had completed TBL fellowships and she was strongly encouraged to do the same by her

supervisor. Choosing her words carefully, and pausing at times to make sure she was communicating what she wanted to say, she explained the influence that he had on her decision to pursue a fellowship and adopt the leaner-centered paradigm in her work:

> Our department chair is very ... he'd done it, and other people have done it, and he's been pushing it on all of us. It wasn't hard. I jumped at it, and I was one of the first people to jump at it after I had learned about it, but it was also a heavy hand. I won't deny that.

Similarly, respected colleagues, especially senior members of departments, joined chairs as extremely influential advocates for their less experienced peers. In her department, Dr. Shamma credits these colleagues with providing the models as well as the encouragement she needed to apply for the fellowship and to embrace and implement the learner-centered paradigm in her practice:

> It's very fortunate to come into a department where the faculty, particularly some of the well-established senior faculty were advocating for effective teaching, in some cases, doing amazingly well. I had that infrastructure. I had the support from my department chair.

These messages about the value of teaching and learning were conveyed in many different ways, some real explicit while others were more subtle. Consistent and ongoing discussions about teaching and learning at faculty meetings, for example, were clear indications that these were important to the department and a reward system that supported this in practice, further confirmed and validated this. Additionally, the observed practices of senior faculty and other departmental leaders and the modeling they

provided through their day-to-day work in a learner-centered paradigm, relayed similar, though more inconspicuous, messages too. Taken together, these intimations normalized the cutting edge teaching practices and provided the impetus for others to start to seriously explore them as well.

Acknowledging the important role that departments and their culture play in a faculty member's teaching choices, the coordinators of the TBL fellowship have been committed to offering the opportunity to a diverse group of faculty from as many different departments as possible. The benefits of this approach was obvious to Dr. Shamma after she completed the fellowship, collaborated with others in her fellowship cohort, and started to immerse herself in the practices of the learner-centered paradigm:

> The other reason they do it, and they also do different levels of faculty, is to get the foot in the door for different communities. My department is fabulous in terms of supporting this as a valuable enterprise; other departments less so. Sometimes they try to colonize a department, convert one or two key people and then it takes over.

Though it will be discussed in greater detail to follow, this colonization has resulted in at least some faculty representation from every school and college actively practicing learner-centered supported techniques. This has created a scenario and process where participants return to their department and, purposefully or not, introduce the paradigm and practices to their colleagues. Exposing others to new ways of doing things, both the challenges and opportunities, often organically influences the practices of their departmental colleagues.

Available training. Introducing a new paradigm about teaching and learning that fundamentally challenges long-standing and tightly held beliefs and practices is a challenging endeavor for any group of leaders looking to make substantial changes at their institution. With many years of experience in higher education under his belt in both faculty and administrative roles, Dr. Michaelson and his leadership group knew that the training of faculty was going to be critical if they were going to be successful in transforming their campus. If not done either well or effectively, the momentum that they were achieving with the initial support of key leaders on campus and in the building of the pilot spaces could be immediately and irrevocably at risk.

"Providing some training to faculty is critically important," Patrick Solomon a graduate staff member in the Center for Teaching told me when describing his experiences working with instructors learning about team-based learning. "We do not want to throw them in without having some idea of what they are getting into and what the philosophical foundations are." Faculty who have toiled in the hard and very challenging work that accompanies any shift in practices congruent with a new paradigm and have had a chance to reflect on their process, acknowledge how important training and preparation is prior to any attempts to implement changes in their classes. As Dr. Shamma told me:

> You should never try this without training. It's so hard, and so discouraging. I think having the training programs and having a core of people go through it with you who are having exactly the same challenges is important. Sometimes down

> to the words the students are using to complain to you. Then you go, "Oh, it's not me." This is going to be rocky.

In addition to crafting several valuable and effective training sequences, Dr. Ales and her team in the Center for Teaching created a Team-Based Learning Fellowship for faculty from across the institution who were interested in dedicating time and effort to become well versed in the learner-centered paradigm and to think critically about how they could re-design their courses to be congruent with the goals of TBL. "She and her team created a faculty fellowship in TBL which was competitive," Dr. Michaelson recalled. "You have to apply to get in and describe the course you wanted to teach and so forth. I think in that first year there were only ten TBL fellows. We gave them a small stipend, like $2,500 or something."

Dr. Whetmore, who like all of the participants in this study is a former TBL fellow, notes the structure and policies that the Center created provided the incentives, the prestige, and the resources necessary to entice an early and critical mass of adopters. "They tried to grow a core, so they grew a core," he recalls. "It became clear that this is a good thing and it's really doing good things for students." Dr. Michaelson found that the fellowship, and the effect of an application and selection process that interested faculty needed to compete for, was a particularly effective program and has played an important role in the recruitment of faculty as well as the paradigm shift taking place there:

> It was such a hit, you know you make something restricted like that, you make it so it's desirable to get into. Departments were putting it on their webpage, "We have two Provost TBL fellows!" This was status.

Applying for, being accepted, and ultimately completing a fellowship was required for any instructor looking to be assigned to the pilot active-learning spaces. It provided faculty adopters with a cohort of colleagues from across the institution whom they could work with and learn from as they explored the paradigm and had their first classroom experiences; an important structure and policy, Dr. Shamma found, of the fellowship experience. It provided a space for adoptees to articulate frustrations, share ideas, lament what is not working, identify what is successful, and celebrate accomplishments:

> In fact, one of my favorite anecdotes about team-based learning was we were doing the crash course sort of week-long workshop kind of thing for my group of team-based learning fellows. They had the previous year's groups for real guinea pigs come in and talk to us. They did this panel discussion and they finished up and they said, "Okay, who has questions?" One person in my group put up a hand and he says, "So we've just been through this week and I just have to ask, when does it stop feeling like your head's going to explode?" The person who had done this and was very committed to it and continues to be answered. He said, "Well, after you've turned the grades in." The guys says, "Oh, so then you have things under control at the end of the semester." He says, "Oh no, you never have things under control. That's when you stop feeling like your heads going to explode.

The camaraderie that the fellowship created, purposeful or not, has also connected faculty from lecturers to full professors and across a variety of departments and specialties that likely would have not worked together in the past. Though in different

academic disciplines, the fellowship has allowed them to recognize synergies in their work and provide, Mr. Solomon has seen as a fellowship facilitator, "…an opportunity to learn from each other. They become important resources both during and after the fellowship." Dr. Shamma experienced the benefits of this academic diversity herself and has had an opportunity to establish meaningful professional relationships with colleagues across campus:

> They will intentionally try to get people from Fine Arts in the same group as someone from say my department…in the same department as someone from History. I mean, someone in my group, in my fellowship group teaches World History, and he got up to talk about how he was thinking of designing his course and what particular activity. We all said, "Can we come? This sounds great." You do get the different perspectives.

This experience has allowed her to continue these relationships and teaching collaborations even long after the fellowship has ended.

Now several years old, the fellowships continue to draw interest each year from faculty as Dr. Whetmore's "core group" of faculty went and taught in the spaces and returned back to their departments with positive outcomes both anecdotally and empirically from across ECSU. The staff in the Center for Teaching who administer the program report that approximately 85% of faculty are retained and continue to teach learner-centered classes when the fellowship concludes. In fact, the new active-learning spaces are frequently full and there is some discussion about how many fellowships will be able to be offered in the future without additional spaces being built, something that

will soon need to be discussed if interest and adoption continues to grow. We've got courses in all disciplines in all schools now being taught TBL and people asking what our next TBL projects are going to be," Dr. Michaelson reports with a demonstrative sense of pride, "When are we going to build some more of these?"

Physical facilities. With the success of the pilot spaces and increasing demand from faculty for additional active-learning spaces at a time when interest in the university from incoming students was growing, a tidal wave of change, as Dr. Whetmore describes it, was starting to take form. Guided by a strategic plan that called for transformation in academics and research and seeking to compete in the state, throughout the country, and in international markets for academically strong students and scholars, the leadership at ECSU were exploring a number of building projects at the institution meant to modernize instruction and provide cutting edge learning, work, and recreational spaces for students, faculty, and staff. One area that presented an opportunity for expansion, as well as differentiation, was in the construction of a new teaching and learning space.

Strategically located in the center of campus and adjacent to the student union and other frequently utilized buildings at the core of the university grounds, the new building was meant to be a landmark structure that would be a hub of activity serving the learning needs of a significant portion of students each day. Home to several academic departments and housing a variety of classrooms, informal learning areas, meeting rooms, a café, and other comfortable study spaces, the behemoth four-story, 150,000 square-foot, 90-million dollar structure is a modern, innovative, cutting edge facility that opened with much fanfare on the ECSU campus in the fall of 2014.

Boasting nearly 2,000 student seats and over 60 different rooms, the new building was constructed with both traditional and active-learning classroom spaces supported with interactive technology throughout the building. With a number of large and small flexible active-learning spaces along with five SCALE-UP inspired active-learning classrooms, the opportunity to offer courses congruent with the learner-centered paradigm was greatly expanded. As Dr. Michaelson noted, this extraordinary growth of classrooms that support these learner-centered initiatives has influenced teaching choices and allowed for both students and faculty to have greater opportunities to teach and learn in these cutting edge spaces:

> We went over that period where I was Provost from no classrooms specialized for TBL to seven classrooms with a total of 576 seats. You multiply that by the 15 or so class periods a week, and you get a lot of students through every single semester.

As theorized, the building has become a critical piece to the learner-centered movement at ECSU and the staff in the Center for Teaching have found that interest from faculty has grown exponentially since it opened last fall. Though the pilot rooms were available in the past, the new building provided additional opportunities for the university community to be exposed to the learner-centered paradigm, some for the very first time. The space helped make the topic and philosophical underpinnings real when faculty were actually seeing the physical spaces and having an opportunity to witness student learning in them as well as faculty colleagues teaching in them. "People are curious," Mr. Solomon has found when they are able to physically walk through and see these unique

classrooms. Looking at the small tables of nine, the technology, and the absence of fixed seating or many of the other attributes of a traditional classroom, the physical facilities communicate right away that education in these rooms is different. What they are likely to see at first, Dr. Shamma admits with pride, is that, “My classes are not under control. You have to be okay with that.” Later, though, they will start to see that providing for a learner-centered education means a total reframing of past practice and what traditional college courses have tended to look like for generations:

> There are days when I get to the end of class and say, "Oh my goodness, I didn't expect we would end up here." But we needed to because something that I thought was clear was really causing the major confusion. We had to go back so my syllabus has on the top, "This is the plan for the semester. It is subject to change." You do have to sort of adjust and be flexible with the students are actually learning. Rather than what you think you have talked about clearly.

Though some faculty have left these observation opportunities feeling uncomfortable and unwilling to consider adopting similar practices, others leave intrigued and interested in learning more. With model faculty successfully teaching learner-centered courses in classrooms adjacent to their rooms and increasingly positive student outcomes being publicized through a number of different means, decisions around teaching choice and available options start to be more seriously considered.

In addition to the campus community, the new building is also garnering attention from others across higher education, practitioners and prospective students alike, who are intrigued by the financial, physical, and intellectual investment that the university has

made towards these endeavors and the valuable learning opportunities that this spaces and paradigm create. "They're always bringing people in through the classrooms and showing them to people…," Dr. Elcik has noticed since moving over into the new building. She is not surprised because the building is certainly something for the university to be proud of and she has noticed how much students and faculty have enjoyed and taken advantage of the new space. "I was in the other classroom that didn't look as nice," she told me when reminiscing about her time in the pilot rooms. "It was long and it was narrow and it had bad air quality, and the students are much happier in the nicer building."

Though only a year old at the time of my visit, the building has started to influence teaching practices and hints of culture change can be seen throughout the university though some practical concerns, as Dr. Whetmore has learned, have started to come about as the demand for these spaces continues to increase:

> One of the issues about it is they've built all of the rooms fairly large. The smallest one is 54 students. There are plenty of classes, especially in humanities and social sciences that are smaller than that. In order to try and maximize the use of the rooms, they put the bigger classes in and that means it's predominately STEM classes that have been scheduled there. That's problematic. Both the institution and I think everybody agrees that that's not right.

As a result, discussion and planning efforts to remodel additional spaces have already started on campus with the strong support of university leadership and the university community:

> There's a push to try and develop some smaller sized classrooms and renovate them…They definitely don't have all this really nice hardware, but they have everything you need for this active-learning kind of classroom, especially the team style. Round tables, white boards, ability to project your own device to the main screen for the room. We're going through a strategic planning process right now…I'm actually on a sub-committee thinking about one of these things. Our sub-committee piece for this strategic plan is to put money in the bank for five years in order to be able to do this in a controlled fashion to increase the number of classrooms that are available. There's that pressure to make more.

Conclusion

Sneaking a quick glance at my watch to get a sense of time, I quickly realize that the interview is approaching the one-hour mark and will likely need to end. Dr. Michaelson is sitting across his desk in his faculty office searching his computer for a copy of his TBL syllabus to print out and share with me. As he continues to click through a number of folders, I scan my interview protocol one more time to see if there are any questions I want to ask before my time runs out. Though it is one of the lengthier interviews I have had, I silently think to myself that the hour has flown by.

As Dr. Michaelson hits the print button and begins to return to where he left off moments before his search commenced, he abruptly stops and looks at the clock himself. Handing me the freshly printed syllabus while simultaneously standing up to retrieve his coat, Dr. Michaelson tells me that he has a lunch with a colleague planned at a student restaurant on campus and that he will have to end the interview here. “I’d be happy to

continue our discussion," he promises as we head out the door and towards the elevators. "I enjoy talking about this." I could tell that this was an authentic invitation and it is difficult to miss his enthusiasm for the topic and the pride he has with their success thus far.

Since this was the last interview of my trip, and the final interview I was planning for the study, a mixture of excitement and angst that I assume every PhD student can relate to, starts to wash over me as the elevator quickly descends to the lobby. As the doors open, I again thank Dr. Michaelson for his time and we split up in two different directions as we exit the building. I am headed toward the campus center with another brief stop at the new active-learning building that is along the way. Now early afternoon, the campus is livelier than it was this morning and I am able to take in some additional sites as I make my way to the large food court for a late lunch and a chance to pull my notes together while things are still fresh in my memory. Incredibly impressed, yet slightly overwhelmed, with the number of culinary options available, I choose the smallest line, grab some food, and search out an open space where I can spread out with all of my materials.

Plugging my headphones into my phone to make sure that the interviews recorded correctly and are ready to be transcribed, I fast-forward through the recordings while stabbing at some of the contents of my burrito bowl. Confirming that my first interview recorded well, I go through Dr. Michaelson's and listen a bit to the recently concluded conversation. While doing so, I get to hear again a very valuable reflection from the experienced academic. It perfectly captures why I having included the institutions I have

and why the learner-centered paradigm and active-learning practices are worth exploring and understanding more about:

> Public higher education at the university level…the top tier level is going to, for the foreseeable future, produce most of the leadership in law, business, medicine, and everything else. Our whole economy depends on it. The idea of giving that away to anonymous online courses…I said one of the things that sold this was the value we added to face-to-face. You could imagine replacing sitting in a big lecture hall with sitting in front of your computer screen, but you cannot imagine replacing sitting in a TBL classroom with sitting in front of your computer screen.

I stop the recording, rename the audio file with the assigned code, and finish my lunch before heading back to the active-learning building to check things out for one last time. "I have one hour or so," I think to myself before I need to hit the road and avoid the meandering moose.

Another View of the Learner-Centered Class and Practices

Despite the fact that I went to graduate school to pursue a higher education career in student affairs, I was always interested in teaching and the academic side of the academy. As a result, like several of the participants in this study, I took advantage of any occasion in my master's program to teach and was fortunate to have an opportunity to continue to do so when I transitioned from school to my administrative positions in higher education. Though these courses were one-credit seminar classes that were more practical skill focused than academic, the chance to be in a classroom not only allowed

me to interact with students in a much different way than I normally did, but it satisfied my desire to be in the classroom.

In retrospect, although my master's program utilized and modeled practices congruent with learner-centered teaching, my formal introduction to the learner-centered paradigm took place early in my PhD program at the University of Massachusetts Boston. The course and the topics we were exploring immediately resonated with me in very significant and meaningful ways and, though I did not know the specifics of what I would eventually explore, I knew that this was the area I wanted to research for my dissertation.

Through the classes I took, the books and articles I read, and the literature review I wrote for this dissertation, I came to better understand the complexities of this topic and learned a lot about learner-centered teaching and learning practices. It was not until I had an opportunity to observe actual learner-centered classrooms, however, that the topic really came alive for me and what I had come to understand through my early research became more nuanced. Therefore, in order to provide additional context for what is different in the learning environments I observed, I want to conclude with some additional narrative about these classrooms and the practices that the participants implemented. I hope that this is helpful for those who have not had an opportunity to experience learner-centered classes for themselves,

Inside the learner-centered syllabus. On more than one occasion while working on my dissertation, I have to admit that I have often found myself feeling incredibly lucky that I am a doctoral student in a time of great technological resources. Though I love libraries and have sat to write my dissertation in nearly every one within driving

distance of my home, I can only imagine how much more difficult the research process would have been if I did not have the internet to assist me in accessing critical information and data. It is from my computer that technology afforded me the opportunity to explore the UMW and ECSU campuses before visiting, read the biographies of my participants in preparation for my interviews, and gain access to a variety of documents that yielded valuable data. On each website and through testing out a variety of search terms, I was able to find faculty manuals, examine promotion and tenure guidelines, review published policies, and retrieved the current syllabi of many of the faculty participants. These latter documents were particularly helpful in ascertaining how, if at all, the written syllabi provided to students were congruent with the learner-centered paradigm and how learner-centeredness was being communicated to students through these traditional documents. This was quickly answered when the first syllabus I opened had a picture of Bruce Lee on the cover.

I am not sure what I was expecting, but the legendary martial artist was not it and my first reaction was to wonder if students who were born in the mid-nineties would even know who Bruce Lee was. Brushing this uncharacteristically pessimistic thought aside, I looked closer though and quickly understood why this faculty member had chosen to utilize this particular image on his syllabus. The text that accompanied the picture stated: "Knowing is not enough, we must apply. Willing is not enough, we must do." Putting this simple message on the first page of the syllabus clearly and succinctly communicates the educational philosophy of the instructor and was the first indication to students that this course required active engagement.

In great detail that not only provides the typical information found on a syllabus like faculty contact information with an outline of the course topics and a class schedule, this syllabus also includes meaningful discussion on what is expected of the students as learners in the course. Though this was a science course on genomes with specific topic related outcomes, this syllabus also provides information about the learning process outcomes that would be gained as well and communicates this in two different sections. The first was within an area titled "What I want student to get out of this class." In this section, the faculty member reveals that he wants them to:

> Explore a sample of their memome and associated behaviors related to college success… Since a college education is fundamentally about meme adoption, about enhancing one's mental capacities, it is useful to explore memes associated with college success, to both become aware of how to do well in college but also to just become more self-aware, a virtue in its own right. By the end of this course I want you to:
>
> - have a better understanding of how to learn.
> - be aware of the values and beliefs that underlie your own college-success-relevant behaviors.

This requires, the faculty member explains, that students identify and draw connections between the various course topics and readings as well as make meaning of the relationship between the topic and their own lives.

A second section afforded a clear description of "What I expect of students." Outlined in this section are expectations of engaged learning and the use of deep learning

skills that are broken down into a discussion around preparation and participation. The former explains what will be needed to prepare for the class each week through a series of readings and purposeful reflection. This requires that students think critically about the readings and situate it again in their own experience. As he clarifies for students about the readings and the frequent reflections that will be written for the course, "It is about how you see them fitting together, about the thoughts and feelings they brought out in you. It's about finding connections."

In participation, the faculty member unambiguously shares his high expectations for the classroom and the active role that students are to assume during their time together. It empowers students to be both learners and teachers, emphasizing the reciprocal relationship that will exist between students and their faculty member and students with each other:

> You will have the opportunity to express yourself, exchange ideas with classmates and your professor, and ask questions that you may still have after the preparation you've done. The seminar will have an around-the-table discussion format where you will be invited to (and expected to!) share your ideas and/or questions at every class meeting. This is your chance to get to know your classmates, learn from them and their genome explorations, and be guided through any particularly difficult concepts or tasks. The more you prepare yourself for the seminar…the more able you will be to take part in a high level discussion in the seminar meeting. This is your live performance opportunity. Make full use of it.

Having a chance to look through and analyze many of the current syllabi of the faculty participants, I noticed right away that each reflected the personality of the faculty member as well as communicated messages about their operating paradigms. One that stuck out to me, for example, provided brief biographies, pictures, and personally written messages from the two faculty members teaching the course as well as from the laboratory coordinator who organized that component as well. These announcements served to not only introduce the students to their instructors but also humanize the teaching team, providing an indication that the relationship they would have with them as part of a community of learners would be different. What they shared provided a brief glimpse into a renegotiated interconnection between faculty and students:

> I remember distinctly when, as an undergraduate, it became clear what area of biology I wanted to study (evolution!) and I owe that all-important epiphany to a special teacher I had one semester…I'm not so arrogant as to think that I will serve that same role for you, but I do hope to live up to those same standards and to spur an interest in areas of biology you may not yet have considered. This will be a great semester!

"I love working with undergraduates at (UMW), collaborating with my colleagues…and pursuing the scholarship of teaching and learning," the second faculty member concludes his statement with and the coordinator enthusiastically shares that, "It has been a thrill to teach and interact with such wonderful, motivated students."

What all of these syllabi had in common, though, were references to learner-centeredness, a structure and expectation for deep learning, an explicitly stated shared

responsibility for learning, high academic expectations, and an emphasis on connecting classroom topics and learning with authentic, real world problems and the lived experience of students:

- Class meetings will include lecture, whole-group discussion, and various opportunities for active learning such as individual and group problem-solving and discussion of case studies.
- In *Foundations of Biology*, you will learn biological principles by working individually and in teams to solve problems, analyze data, explore case studies, identify and develop solutions to real-world problems, and conduct laboratory investigations.
- Your work in these courses will help you learn to approach real-world problems from a scientific perspective and develop skills for independent learning, critical thinking, problem solving, communication, and scientific reasoning.
- Responsibility: Your learning is ultimately your responsibility. We will work very hard to create the best possible learning environment for all students in the course, but you will need to commit to being an active participant in your education (i.e., learning is something the learner does, not something done to them). This means you will need to put the time and effort into the course; it also means that you will need to know when to seek help from peers and instructors, and even to tell the instructors when something is unclear or perhaps even interfering with your understanding.

- Recent research has demonstrated that the best way to learn science is by thinking like a scientist, and we will use this approach throughout the semester. At the core of how we want you to approach the course material is the question, "How do we know what we know?"…In short, you should consider yourself a practicing scientist when approaching the material…and discussion of topics will be facilitated by use of the primary literature, data sets, case studies, and simulations. You will, of course, need to learn the foundations of the material we will be covering, but unless you also consider the "hows" of our current understanding of life, you will be trying to learn a set of sterile information devoid of relevance.

For many of the participants in this study, the syllabi was just one way to communicate the learner-centered paradigm and provide context to students for what they were going to experience in class and the role that they were going to play in the learning that was going to take place there. While these documents set the stage nicely, it really peaks when they are together, in person, in the learning spaces.

Inside the learner-centered classroom. When I first walked into a learner-centered classroom, I have to admit that it was a bit surreal, the culmination of a long research process. I had read so much about this topic and had learned so much about these spaces that it was a special moment to finally be able to see it in person to compare the images in my head with reality. Very quickly, the learner-centered paradigm was no longer just a theory in articles and on countless book pages, but something that was real and something that I could see in front of me. Theories and paradigms came to life for me when I was in that space.

All of the learner-centered courses I observed while conducting research were in modern SCALE-UP inspired classrooms and when you enter these spaces, like so many participants explained, you immediately sense that something different takes place here. Looking around, there is very little that resembles traditional classrooms and the lack of an area to focus on is almost uncomfortable for me at first. As a creature of habit who always situated myself in the first or second row of any classroom I was in as a student, it was a bit discomforting that there is no obvious "front" of the classroom and no podium or desk for a faculty member to stand or sit behind to communicate where my attention should be focused. The arrangement of student desks and chairs did not reveal any hints either as student seating is neither fixed nor in rows. Instead, they are arranged around small round tables of nine that require that they face each other rather than at one predetermined focal point. Monitors or screens are hung throughout the space and they can either be used to transmit the computer screen of the faculty member or of any student or group with a simple toggle of a button. White boards are arranged throughout the room and each group of students has an assigned board to use to facilitate group work, learning, and problem solving. In many classrooms, cameras lodged in the ceiling throughout the room are trained on these boards, ready to transmit a particular group's work to the entire class. A small console that houses a computer and other technology for the faculty member is located towards the center of the room.

When I arrive for one of my first observations, a majority of the students assigned to the class are already making their way to their seats with their assigned teams, accessing the large space through four large doors along the side of classroom adjacent to

the hallway. With no tight rows to traverse or snug lecture hall seating to negotiate, the students quickly make their way to their seats, a steady stream of over 150 students doing so with relative ease. Greeting their classmates at their table, connecting laptops, pulling up slides, and toggling the on/off buttons on their microphones to make sure they are working, there is a very different vibe here than I am used to. It almost feels more like an event is going to take place rather than an early Monday morning science class. There is a buzz as teaching assistants make their way around the room completing last minute tasks and the faculty member converses with a few students as he prepares for the start of class.

This particular room is a large rectangle shape and looking around, I find that despite the size of these rooms, the smaller tables allow for a sense of intimacy that was surprising to me at first. As class got started, however, I found that the technology, the amplified sound, the movement of the faculty member, and even an absence of a front of the room, eliminates any feeling that any of the tables are in the back. No matter where a team is located, the rooms allow for a common experience and the learner-centered practices that the faculty implement seem to engage all of the students equally. Though there are opportunities for individual students to answer or even pose questions themselves, and they are able to do so by activating their microphone, many of the strategies that the faculty use demand group discussion and problem solving. When questions like this are posed, groups instinctively get up without prompting and make their way to their white board to discuss and work on the problems at hand. It is more difficult, I think as I watch this class, to blend into the background and rely on others to

do the heavy intellectual lifting. When working as planned, every member of the class is expected to do their part to contribute to their own learning as well as the learning of their peers.

As the syllabi describe, the learner-centered classes I witnessed and those that I had described to me during the interviews, reframe the role of the instructor and ask more of the students in the class. Beginning each class with a careful consideration of what they would like students to learn or be able to do by the end of the course or even the end of the day, informs the way that the faculty member can facilitate this happening. As one participant wrote in their faculty profile, learner-centered classes are made up of purposeful opportunities to engage students through intentional strategies that take advantage of different methodologies that address a variety of learning styles and preferences:

> Each class period is structured around a hook ("what the heck is going on?") to engage the students, a mini-lecture or two (for content delivery), small-group activities and discussion (to reinforce content), and whole-group synthesis (for a "big picture" view of the topic).

For the veteran learner-centered educator and the first-time teacher alike, this is sometimes done with great choreography and at other times, it can look rather chaotic to an unfamiliar observer. Regardless, when done well and with purposefulness, both are consistently effective in facilitating understanding and deep learning.

As Bruce Lee extoled in the syllabus described earlier, many of the learner-centered classes I observed utilized active-learning techniques that asked students do

tasks and complete assignments and projects that requires that they apply what they had read or what they had just been exposed to online before class or in a mini-lecture that the professor may have just delivered. A good example of this is a learning strategy that one participant shared with me about helping her students understand an important topic in her biology class:

> …active learning is having students doing the actual work of the field and not coming to class and telling what I told them they were supposed to have read, and possibly didn't. Setting the bar higher, so that they actually come prepared to take what they have read about and put it into practice. We do a lot of problem solving.

She also utilizes hands-on activities that challenge students in different ways:

> I have a reputation, good or bad, for using manipulatables, things they can handle. I have pool noodles because I use them when I am teaching mitosis and myosis. I tell them, "I know you guys think this is hokey. I think this is hokey, but there is kinesthetic learning as well as what you read in the book and I want you to help figure this out and move around. Tell these chromosomes what they should be doing." We clear out a space and people are holding chromatids and yeah, it gets pretty funny.

She recognizes that using pool noodles in a college classroom is not a typical practice, but is equally quick to acknowledge that her use of these active learning techniques work and that, "…students actually learn better. They will come to me and say, 'I remember

when you did the stupid thing with the pool noodles, but, you know? I understand myosis now.'"

Facilitating activities both inside and outside of class that are effective in improving student learning is a balancing act. "They needed to be high level, they needed to be real, they needed to be valuable, educational, they needed to not be too hard," one participant stresses. "Sort of this Goldilocks zone of hard enough to make it so you've got to do it as a team, not so hard as to be frustrating."

An additional attribute of the learner-centered classes was the intentional connection faculty make between course topics and real life. This helps make the topic more meaningful for students and participants have repeatedly found that this increases both student engagement and learning outcomes. Projects out of class often utilize "real life" data and issues that have tangible applications. I learned about compelling projects taking place at the case study campuses that include everything from presenting a cure for cancer to playing the role of power plant executives needing to figure out what air quality permits they would have to obtain in order to propose a new plant and how to navigate existing environmental codes to make it happen.

For the participants in this study, facilitating learner-centered classes has been an evolving process and involved a lot of trial and error as they experimented with different techniques and exercises. The first step, of course, is embracing the paradigm and once this is done, the dissonance it naturally facilitates changes. Placing a greater emphasis on what students need to know and how they can learn it, rather than what faculty should

teach, transformed practices and led to the creation of in and out of class activities that I observed that helped students gain the skills they need to be successful learners.

CHAPTER 5

DISCUSSION

Discussion of Findings

According to the U.S. Department of Education's National Center for Education Statistics (2015), there are currently 1.5 million faculty members in American higher education today. Teaching students across the spectrum of degree and non-degree programs at a variety of institutional types, faculty at all levels of the professoriate are constantly making critical teaching choices that inform how they organize their assigned courses. Congruent with the formal and informal theories and paradigms that they hold in regards to teaching and learning, faculty members identify the strategies and methods they will utilize to facilitate and enhance the learning outcomes of their students.

Seeking to have a more nuanced understanding of the organizational structures and policies that support the implementation of learner-centered teaching and learning practices revealed a number of compelling research questions that guided this study. They are: 1) How is faculty implementation of learner-centered teaching and learning practices influenced by organizational structures and policies? 2) What organizational structures and policies have the greatest impact on changes in faculty practice toward learner-centered teaching and learning? and 3) What organizational structures and policies are most effective in supporting faculty use of learner-centered teaching and

learning practices? Using examples from the case studies, and the unique perspective they provide being in different stages of the adoption process, each of the questions will be discussed in detail.

Influence. For each of the participants in this study, their decision to earn an advanced degree and pursue a career in the academy was predicated upon a number of different personal and professional goals. Hailing from a number of competitive and well-known graduate programs that regularly produce some of the most prolific scholars in higher education, each of the staff and faculty interviewed here were poised for successful careers as contributing academics in their field. While developing a successful research agenda was imperative as junior faculty members in the early stages of their career, each of the participants, however, shared a desire and interest in the teaching aspect of their positions as well. For many, this emerged early in their graduate school experience where a passion in teaching blossomed when they were introduced to teaching as TAs. For others, this interest in teaching and learning developed alongside their scholarly careers.

Although each faculty member came to learn about the learner-centered paradigm and practices in a variety of different ways, each of the participants chose to adopt this new approach to education despite the fact that it challenged their own experiences in higher education and the paradigms that they developed as a result. For each of them, however, individual motivation along with organizational structures and policies influenced their implementation of learner-centered teaching and learning practices.

1. *How is faculty implementation of learner-centered teaching and learning practices influenced by organizational structures and policies?*

As large and complex institutions of higher education, both the University of the Midwest and East Coast State University maintained policies and supported practices meant to provide expectations, protocols, and supports for a variety of organizational and educational functions. For the faculty participants in this study, many of these structures and policies positively influenced their adoption of the learner-centered paradigm and the implementation of congruent teaching and learning practices.

The decision-making process around adopting innovative pedagogies, however, is a complex one, made even more challenging by the unique progression and the varied lenses that each individual employs. Often based upon nebulous criteria such as their lived experiences, established world views, and personal interpretations of organizational culture, individual lenses are also made up of practical considerations as well. This includes, but is not limited to, a faculty member's rank, academic discipline, tenure status, number of years that they have spent at the institution, and their internal teaching motivation. All of this comes together and informs their development as they become aware of, interpret, evaluate, and ultimately choose to implement learner-centered teaching strategies.

As one of the participants noted, "People want good policy. They want thoughtful policy." The reason, they have found throughout their career, is that they and their dedicated faculty peers "…want to make good decisions for the institution." If committed to their university, as well as higher education as a whole, faculty are

appreciative of policies that allow them and their fellow academics the space, and the necessary support structures, to effectively practice their teaching and conduct their scholarship.

Through this research, influential policies and structures were both explicit edicts as well as more understated, unwritten community expectations expressed, often times, in very subtle ways and reliant on the faculty member's aforementioned lenses. This is likely why most participants, when asked, had difficulty identifying specific policies and structures that influenced their adoption and practice in the learner-centered paradigm. "I am not sure there was one policy per se," one faculty member concedes to me after pausing to reflect upon my question. This was a response, though phrased in different ways, which was frequently repeated. As such, it was often necessary to extrapolate from their reflections and responses to other inquiries, the overt and covert policies and structures that undoubtedly impacted their decisions and practice and would sometimes become clearer to themselves as the interview went on. In situations like this, I would often repeat similar questions at the end of our interview and found that they were sometimes better able to provide more in-depth analysis after being engaged in the conversation for some time.

Taken together, this study found that these two institutions had policies and structures that provided the stable foundation needed for innovation as well as the motivation required for sustained interest. The former gave faculty with the individual motivation to participate in active learning with the actual and philosophical room and resources to explore and implement changes that challenged long-standing practices.

“The culture is really to try new things and be innovative,” one participant told me. “I just started trying things.” This empowerment emboldened faculty to be more open to taking risks in their teaching and classroom methodologies knowing that it was being encouraged by leaders and peers. As another participant shared:

> …she put out an offer...saying we want somebody who's willing to do this. To me, it was like “Okay, this is an experiment. I can do this experiment.” If you really are saying this is better, then I should want to do this experiment.

Absent this feeling, and the comfort that it ultimately provided, it is likely that a faculty member would not make the decision to pursue new teaching and learning strategies.

The latter, on the other hand, allowed and encouraged faculty to remain engaged in the hard work that embracing a new paradigm and implementing change demands. “It's so hard,” one participant bluntly recalled to me about her initial experiences with active-learning classes. As was noted repeatedly, the early stages of paradigm change are very challenging and without feeling that there are policies and structures that valued it, the likelihood of adoption at the individual level would have been unlikely and at the institutional level would have been nearly impossible.

One of the most critical factors in the influence of policies and structures on the adoption of learner-centered teaching practices is whether or not faculty view their work environment as being supportive of the paradigm. As one participant affirmed, “I think that made a big difference that we felt that we were being supported in our efforts and that kind of thing.” Another was even more succinct, “Institutional support is huge in so many ways.”

Determining the level of support that was present at their university, both at the larger organizational level and then at the departmental level, required that faculty members make meaning of formal and informal policies and structures through their lenses and from their unique place in the institutional hierarchy. This included policies and structures that emerged at the institutional level, such as budget allocations or faculty development training, as well as those that were the lived policies and structures of their schools, colleges, and departments such as departmental leadership or teaching assignments. Though often informal, this meaning making process was critical for each of our participants as they assessed relevant policies and structures in order to validate that learner-centered teaching practices were important and supported.

Positive outcome assessments resulted in determinations that the university was supportive of the learner-centered paradigm and participants often described positive and supportive feelings that they were left with and credited their institution as providing "powerful symbols," "validation," "incentives," and "clear signals" about the increasing value of the learner-centered paradigm. They felt safe to challenge themselves, their colleagues, and their students with new ways to view and practice teaching and learning. For example, one participant's personal assessments assigned meaning to the commitments that their university has made to the learner-centered paradigm, including the considerable financial investment that was made to construct a new building with active-learning spaces and to invest in cutting edge technology and training. Here he describes one outcome of his assessment of policies and structures:

> What they do is they are very powerful symbols of undergraduate reform. In other words, when the university puts that kind of money, and has that many faculty teaching in that space, it's making a statement. For us, it's undergraduate education…

For this faculty member, his personal evaluation of policies and structures led him to believe that undergraduate education at his institution, vis-à-vis the implementation of active learning, is of equal importance with scholarly research and graduate student education. This conclusion provided some comfort and further supported the efforts he was putting forth towards learner-centered teaching.

For another faculty member at the same institution, his own scan of the university's environment and the policies and procedures that he has experienced there, has also encouraged him to continue honing his learner-centered teaching and he posits that this is true of his colleagues as well:

> I can't totally explain where that comes from. I think part of that is, like I say, the Upper Midwest has a social value on education. I think that permeates. I think there are a lot of people that have this amorphous feeling that education is important and even though we're a research institution it's important.

Likewise, another participant from the other case study has also interpreted her institution's policies and structures as being supportive. Alluding to a number of policies and structures throughout the interview that have been important to the learner-centered movement at ECSU has left her with the impression that "There is a focus on teaching here that is significant." This has helped her feel more confident about her decision to

spend the time it takes to teach learner-centered classes even as she works through the early stages of the tenure process, a decision, she points out, that her pre-tenure peers at other institutions have not made. So despite the extra work that balancing her teaching and research initiatives entails, the aforementioned impression was powerful enough to motivate her to try to do both.

When the teaching culture becomes significant enough that it is evident to a critical mass at the institution, it soon becomes clearer to those on the outside as well. For prospective faculty applicants with an interest and passion for teaching, the environmental scans of policies, structures, and learner-centeredness often starts early in the application process, long before they join the campus community. Recalling the results of her assessment throughout the recruitment process, one participant's pre-interview research and experience on campus not only increased her interest in teaching there, but left an indelible mark about teaching and learning that she remembered many years later: "ECSU, when I interviewed was a place that seemed to do it reasonably well. Where it did matter, how well you taught. Not just that you showed up, a warm body that talked at the students." This culture was meaningful to her and she was very interested in joining the institution as an instructor that would be able to focus on teaching and have that be valued. Later, after being hired, this impression, as well as the assessments she made about her department from her new position, encouraged her to apply for the team-based learning fellowship and adopt the learner-centered paradigm and practices in her teaching.

It should be pointed out that, consistent with the higher education culture that values academic freedom, there were no policies at either institution that required the adoption of the learner-centered paradigm or related strategies. This fact was not lost on one participant who felt that this was a positive thing for the faculty that he works with:

> …the lack of policies and procedures that would mandate active learning…is in fact a very freeing notion…They feel trusted, you might say, to take advantage of their own creativity, their own vitality, as faculty to tap into their own intrinsic motivation to carry out the classroom as they see fit. What that tends to mean is that active learning on this campus…evolved and evolved over time.

What this indicates is that policies and structures do not have to mandate particular paradigms or teaching strategies. Rather, formal and informal policies and structures can be created in ways that do not violate the freedoms that are so important in the academy, but that can instead influence their adoption of the learner-centered paradigm and the implementation of congruent teaching and learning practices in subtler, but equally meaningful ways.

Faculty are constantly assessing institutional culture and making meaning of the policies, structures, and practices they see. Well-conceived policies and structures, this research has revealed, can positively influence the adoption of the learner-centered paradigm and the implementation of congruent teaching and learning practices. What follows is a discussion about some of these specific policies and structures.

Impact.

2. *What organizational structures and policies have the greatest impact on changes in faculty practice toward learner-centered teaching and learning?*

For the faculty in this study, organizational structures and policies played a critical role in introducing, facilitating, and supporting their exploration and eventual adoption of learner-centered teaching practices. Evaluating both stated and unstated structures and policies that emerged in this study, those that had the greatest impact on changes, fell within several themes identified in the findings. These included policies and structures involving institutional leadership, academic departmental influence and configurations, faculty training and development programs, physical facilities, and incentives to learn and develop new practices. This research found that together, these organizational structures and policies had the greatest impact on changes in faculty practice toward learner-centered teaching and learning.

Institutional leadership. One significant finding that emerged from this study was the critical role that leaders throughout the organization played in faculty member's adoption of the learner-centered paradigm and related changes in classroom practices. Both institutions had leadership structures and practices at the presidential, vice-presidential, college, and departmental level that faculty formally and informally assessed and interpreted as they made paramount teaching decisions. At each university, and in every level of the two organizations, leaders cultivated an atmosphere and structure that encouraged innovation. This allowed new ideas, as one participant recognized, to emerge from the top down as well as the bottom up. As such, organizational leaders were

receptive to the idea of potential paradigm change and comfortable with empowering staff and faculty across campus to pursue these new teaching and learning innovations.

Evidence of these structures, one faculty member told me at ECSU, could be seen in the way that the provost was encouraged to move forward with exploring learner-centered practices after introducing the idea shortly after his arrival. Despite the fact that the provost was new to the institution and was proposing a paradigm that was going to challenge the long-standing teaching practices of the university, policy making structures and leadership practices encouraged and provided resources for further exploration. At UMW, the way that one critical college leader in particular was given the space to initiate and manage meaningful change was repeatedly recognized by faculty observers across the institution. As one participant shared:

> The fact that she was hired and given the reigns as opposed to squashed is, I think, credit to the institution and larger, higher level leadership. She is different in the sense that she really wants to make big changes.

Repeatedly, leadership structures emboldened change agents to advocate for and influence learner-centered initiatives, including the eventual construction of active-learning buildings at both schools. As will be discussed, these physical structures have impacted and supported changes in faculty practice, but would not have been realized without the leadership structures that made them possible in the first place. As one participant recalled:

> We had a very strong Associate Vice President in our facilities and management area who knew the President well, knew the Provost well. He sold them on the

> idea that we needed another building to replace the old building here but it shouldn't…be replicating what is on college campuses for decades, if not hundreds of years. The President and Provost got very strongly on board with this. Our Board of Regents got on board with it.

These environments, as seen through the lenses of campus personnel, and the leadership structures and informal policies that created and sustained them, were meaningful to staff and faculty. They provided clear signals that there was support at the executive leadership levels and faculty were then able to focus attention on leadership structures and practices at the college and in the department in order to ascertain the level of support that could be found closest to where they are in the organizational hierarchy.

"I think he…sort of created the…environment for, 'Let's do what's going to seem best for the students,'" one participant recounted for me when discussing support in her college for active-learning classrooms and some of the indications she received from her dean in regards to the acceptance of the learner-centered paradigm. Through a number of policies and structures, including empowering the associate dean to take on a leadership role in the learner-centered movement, the creation of a department focused on learning, the establishment of the teaching faculty position, and the implementation of a promotion track for these faculty, it was clear to another participant, that "The dean was very supportive of this whole thing."

For faculty members who were actively assessing the organizational climate for change, these confirmations at the institutional and college level led to a final assessment at the department and structures there were evaluated as well. Chairpersons and other

faculty leaders in the department created local policies and structures that invigorated and supported faculty experimentation and changes in practices. These positive affirmations were often extremely effective in bringing about changes in the teaching practices of department members as one participant experienced herself:

> It's very fortunate to come into a department where the faculty, particularly some of the well-established senior faculty, were advocating for effective teaching. In some cases, doing amazingly well. I had that infrastructure. I had the support from my department chair, who actually suggested it to me.

In light of the infrastructure that this department provided, this participant was an early adopter of the learner-centered paradigm and has become a vocal proponent of active learning on her campus. Having experienced the growing pains that accompany any shift in practice yet armed with empirical data that confirms increased learning outcomes for her students, she often volunteers to work with faculty peers across the institution who are considering implementing similar changes in their courses as well. Her influence, no doubt, has had an impact on the teaching choices of those in her department that have seen her work and advocacy or have benefited from her assistance. One participant likened this to a "contagion effect." Faculty would make changes in their practice and return to their departments where they would influence others to do the same. This has certainly been the case with this participant.

Academic departmental influence/configurations. Academic departments played an important role in the teaching and scholarly life of the faculty participants. It is from here that faculty experienced the larger organization and the influence of

departmental culture on teaching decisions is significant. As discussed earlier, faculty often looked at departmental leaders and disciplinary colleagues for both stated and unstated cues about the importance of and the practice of teaching and learning.

At UMW, the decision to create a department in the college of science dedicated to learning was a bold initiative that has provided an impactful structure and a number of influential policies that have informed learner-centered teaching choices. Chief among these was the development of the teaching professor position. Modeled after other professorships that exist at the university, research professors for example, these new nine-month positions were created to provide a formal structure for the non-tenure track teaching professionals in the college. Though their positions called for a greater emphasis on teaching over research, the faculty professor title made their role more prominent and validated the important and complementary role that they play at the college supporting the expanding learning needs of students in a variety of introductory and advanced courses. As such, five year renewable contracts were offered, permanent office spaces were assigned, and promotion policies were created to provide advancement opportunities to teaching faculty congruent with those of other professors across the institution. Assistant Teaching Professors could be promoted to associate and full professorships and there is well-articulated promotion criteria that appropriately redistributed the traditional percentages placed on teaching, research, and service.

The advancements that teaching faculty have made in incorporating the learner-centered paradigm has impacted the practice of all faculty across the college. They not only teach learner-centered classes, but they have been working to study, publish, and

disseminate empirical research that discusses the experiences and learning outcomes of their students. As emerging experts on the learner-centered paradigm and related teaching and learning practices, they are often asked to present at conferences and are frequently invited to visit other institutions across the country that are in the exploratory stages of paradigm change.

The existence of a recognized academic department where many learner-centered faculty can be housed together has provided an important and familiar structure that is commonplace in the academy. Like any other academic department in the college, the new department provides a centralized place for teaching faculty to join together with tenured and tenure-track faculty around a variety of science disciplines, who are equally interested in teaching, learning, and scholarship.

Created in the midst of the learner-centered changes that were already taking place there, the policies and structures around these two innovations helped increase momentum and further signaled the commitment that the university and the college were making to the learner-centered paradigm. As one participant noted, the creation of the department and the new faculty positions was noticed by faculty and staff across the institution and further highlighted the learner-centered initiatives taking place at the university. This encouraged additional faculty to commit as well:

> It put it on people's radar screens and then I think that helped a lot of other people come on board too, that they realized it's not that the teaching faculty are lightening the load for the research faculty by taking up some of those high-

> enrollment classes. They actually had an expertise and they're actually teaching in a really different way.

Observing their teaching professor colleagues and learning more about the learning outcomes that students were achieving influenced changes in their teaching practices as well:

> Then they started being open to say, "Oh, some of those things they're doing is better and there's evidence for it." I think it was something cultural but I can't exactly say what it was, then a few people really methodically snowballing, then you get to this point where there's enough stuff in place. I think with the creation of the new department, also, this really visible sign that we're not just taking some courses off your plate but we're really offering something that we're putting a lot of time and energy into. Then I think that's helped it grow from there.

In addition to further validating the importance of teaching within the college, these policies and structures were seen to others as the institution "putting money where their mouth is." These new structures further supported the paradigm change going on and recognized the role that learning was to play in the college. It also recognized the important role that teaching faculty play and lessened the likelihood that they would be relegated to second class institutional citizen status by making their role more prominent and on par with the variety of faculty roles that existed throughout the institution.

Faculty training and development programs. Policies and structures around faculty training and development programs had some of the greatest impact on changes in faculty practice toward learner-centered teaching and learning. These programs, both

formal seminars, workshops, and fellowships, as well as informal one-on-one consultations, not only exposed many faculty to the learner-centered paradigm and philosophical underpinnings, but provided the challenge and support necessary to grapple with the significant challenges surrounding paradigm change. Leaders recognized that this training and curricular support was critical for faculty who were understandably reticent about leaving the comfort of what they had done in the past for a way of doing things that was new and unpredictable. As one participant experienced, along with needing to reconcile the dissonance that accompanies opposing paradigms, they had to confront significant changes in their comfortable classroom environments and predicable ways of doing things:

> Faculty have a lot of anxiety about teaching in these rooms for the first time, as they should. It's a different environment. You need to do different stuff. It's weird not, you know, being in the middle and having students behind you. Strange. I think you do immediately sense that this is very different, and students do too, when they come in to these rooms.

To influence faculty adoption of meaningful change in their work and to best prepare them to be successful in these spaces and in utilizing new techniques, each institution took very different paths towards providing training. In congruence with their own faculty and organizational cultures, the training policies and structures that emerged at both institutions were equally effective yet reflected the unique needs of their faculty.

At ECSU, the Center for Teaching created a number of different formal development programs for faculty, requiring those who are interested in teaching learner-

centered classes in the new active-learning rooms to participate in one. Competitive fellowships were particularly successful initiatives, providing faculty over the course of one academic year, an opportunity to explore learner-centered teaching and learning practices in great depth. Part of what made their approach to training so successful in the eyes of faculty and staff was the quality of the training and the professional diversity that each fellowship cohort had.

The training structure and policy at ECSU was to offer fellowships to applicants from a wide range of colleges and departments from across the university and at all levels of the professoriate, placing instructors and junior faculty with their senior colleagues. As one participant noticed, "They will intentionally try to get people from Fine Arts in the same group as someone from say my department, Bio Chemistry and Molecular Biology, in the same department as someone from History." This was purposefully designed this way for an important reason, as one of the participants came to experience after reflecting on her own fellowship:

> To get the foot in the door for different communities. My department is fabulous in terms of supporting this as a valuable enterprise. Other departments less so. Sometimes they try to colonize a department. Convert one or two key people and then it takes over.

This was an effective strategy. By selecting faulty from different departments, fellows were spread throughout the campus exposing a larger number of peers in a greater number of disciplines to learner-centered teaching and learning practices. Being able to see the learner-centered paradigm in practice, with a respected colleague doing the

facilitation, helped faculty see, for themselves, what a learner-centered classroom is all about. This was impactful, as one participant pointed out, because faculty have all too often been scarred by past active-learning experiences and thus too quickly deem them as being less academic. “It doesn't seem collegiate,” he fears some people feel who have had limited exposure in the past. As such, he posits that:

> …for them to get it, is to see it. I think they have to see it almost before they even read the literature on it, because in some ways the seeing of it allows them to say "Whoa, things are happening at a fairly advanced level here. Maybe that actually could yield something."

Aside from providing a small stipend to participants, the fellowship structure provided enough exclusivity and prestige within the community that it was extremely attractive for faculty. As one of the participants shared, the “…fellowships are one way to give status to people who want to do this…It was such a hit, you know you make something restricted like that, you make it so it's desirable to get into.”

Another faculty development program that impacted change in faculty practice was an external program through The National Academies Summer Institutes on Undergraduate Education. In collaboration with the Howard Hughes Medical Institute, these five-day, intensive programs seek to help a small cohort of faculty teams from different institutions “…transform education at colleges and universities by improving classroom education…” by helping participants develop skills in active learning, assessment, and diversity (The National Academies, 2016). Offered at a number of regional locations throughout the United States, the Summer Institutes provided training

and faculty development for participants from both institutions. In fact, for one tenured faculty member at ECSU, it was through this experience that he was first exposed to the learner-centered paradigm. Though highly skeptical of active learning at the start of the week, the institute was effective and affirming. He decided then and there that he needed to adapt his operating philosophies and would immediate redesign his courses to incorporate active learning in his classes.

At UMW, leaders in the learner-centered movement in the college of science encouraged their peers to participate in the training as well and after a few years of attending the institute at other universities, UMW started hosting a regional summer institute on campus. This was repeatedly identified as an impactful experience by faculty who have been able to participate and has led many to finally initiate learner-centered practices in their courses.

Another effective structure and policy around training that impacted faculty change was the creation of training modules that were facilitated by other faculty. As one participant came to find out, faculty at UMW often responded best to training from their academic peers, going so far as to prefer learning with and from those that were as close to their discipline as possible. As one staff member in the Center for Teaching experienced:

> One thing we consistently found was that faculty want to learn from other faculty members. They want to learn about teaching from other faculty members. They want those faculty members to be as close as possible to them in a disciplinary

> sense…like a scientist wants to learn from other scientists, and he might want to learn from other life scientists.

Their rationale, he came to learn, is that the faculty there saw too many differences among their fellow academics in regards to their students and the material that is covered:

> I've had geologists say to me, “I can't learn from a chemist. That's totally different. This is earth science. Our students are different; our materials are different. What works for them won't necessarily work for us." Right? This is not far away; it's not like they're learning from somebody teaching French poetry.

Physical facilities. For the faculty at both institutions, nothing had a greater impact on changes in teaching and learning practices than physical structures. Following a similar path from the creation of pilot rooms to the construction of new buildings, the erection of intentional learner-centered spaces was a critical moment in the learner-centered movement. The size and scope of the projects, as well as the great financial investment that was being committed, sent powerful messages to both internal and external constituencies. Built with great fanfare and attention, and located in high profile locations on campus, these impressive physical facilities unambiguously confirmed the deep and meaningful commitment that the university was making to learner-centered teaching.

Modeled after SCALE-UP classroom design, the active-learning classrooms that were in each building supported the learner-centered paradigm and related practices. Reimaging classrooms and what learning spaces are supposed to look like, these new rooms intentionally deemphasize the traditional notion of the instructor as the focus of

the classroom, removing faculty from behind their podiums and physically placing them among the students. The absence of tiers, the grouped seating arrangements, assigned white boards, and advanced technology, to name a few attributes, supports an atmosphere and practice where passivity is difficult and every participant is empowered to be an active contributor in class. The responsibility for the learning taking place there, as well as the construction of knowledge, is one that is owned by students and faculty alike.

For the participants in this study, the active-learning spaces were so different than traditional classrooms that participants found that these structures significantly challenged instructor-centered practices and organically brought about meaningful and long-lasting changes in teaching and learning. As one participant articulated:

> Any place that does a similar kind of large-scale building design will get, this is where I would argue, will get the change in practices, because the rooms are a selective force. They are an evolutionary force on the teachers in them, because you cannot lecture in there and feel it is a good room for that. You know there's something, students just waiting to talk to each other. It's so built on that premise that essentially you want to give it to them, you want to turn it to them to talk to each other, to work together.

This was especially true at UMW where the number of active-learning classrooms exceeded early demand and Registrar policy assigned faculty to active-learning classrooms just like they would be allocated instructional spaces elsewhere at the university. This resulted in faculty espousing all paradigms to be placed in classrooms that significantly challenged traditional methodologies. Though originally born out of

practicality, this was a policy that unintentionally had a positive impact on changes in faculty practice as one participant recalled:

> That's why they made the most wise decision…You just got scheduled like it was any other classroom. They would give you training...they would come and show you how to put things. They made the controls very simple. You could get up there and punch some things and figure it out probably by yourself. Just the expectations was it's just like any other classroom. That made a difference and people change.

As is the case with any modern construction, participants found that the very fact that these buildings were new and fresh was a draw for faculty at both institutions who were interested in teaching and learning within innovative, cutting edge, and technology-rich classrooms. Regardless of the impetus, one participant confirmed that the active-learning building did lead to changes in faculty practice:

> Well, the new building and classrooms, that's really had a big effect and I think that's kind of spread through university and getting more departments interested in teaching in those rooms and changing the way that they teach…

With the attention that these buildings were receiving on campus and even throughout the state, additional interest was starting to pique and further impacted faculty changes. Admission tours, for example, were amended to include these buildings along the prescribed route to highlight the commitment to undergraduate education that the university was making and academic departments publically boasted about the building and the contemporary classrooms that could be found inside. Current and future students

alike, these efforts were meant to make clear, would benefit from this distinctive, signature initiative.

Additional policies implemented in regards to these physical structures included the use of space and who was able to use and access it. As prominent structures on campus, located in high profile locations, the buildings present additional opportunities to leverage the space and utilize it whenever possible. This exposed faculty with opportunities to experience the space themselves through a variety of different meetings, seminars, and training opportunities that took place there. As one participant suggested, frequent use of this space for faculty-related events could sometimes have a positive impact on changes in faculty practice:

> …these rooms, once built, can become great rooms for retreats, for professional development, for gatherings of one sort or another, for faculty with faculty. Then they essentially get this opportunity, wow, to talk at the table with their colleagues or whatever, and they get it. To the extent it's not just restricted to teaching students, but is actually seen as a device that can help faculty work. I think a lot of people have been introduced to the rooms in that way, and sometimes they go "I could teach in here."

Allowing faculty to interact with the space and even experience it themselves from the perspective of a learner, helped demystify the classrooms and what can and does go on there. It connected, in a real way, theory with actual practice and led many to continue to think critically about their own paradigms about teaching and learning.

Constructing the new building with the number of classrooms in each exponentially increased the percentage of students who were now going to experience learner-centered classes and could, as the Provost at ECSU hoped, make this a signature part of the undergraduate experience:

> We went over that period where I was Provost from no classrooms specialized for TBL to seven classrooms with a total of 576 seats. You multiply that by the 15 or so class periods a week, and you get a lot of students through every single semester.

The same thing took place at UMW as well. One participant estimated that, "Now it's at the place where over 1/3 of our undergraduates every year take courses in these active-learning classes, which is a tremendous number of individuals."

The result, participants found, is that student paradigms are also starting to change and the learning benefits are becoming real to those who experience these classes:

> I think the classrooms, one of the things that's maybe not talked very much about them, is how much respect they embody for the student. Because you are asking the students to work together, because you are saying you have something to give to your team and they have something to give to you, because you are valuing the resources they are to each other, there is something very positive in that that is reflected in the architecture of the room. I think students recognize that, they choose it…

Though still rather subtle, students are starting to demand more learner-centered classes, and even some are finding it difficult to return to traditional classrooms that are more

passive after becoming truly engaged in their learning. How this may impact faculty and whether it could lead to any change in practice will soon be seen. It was the opinion of several participants that it will eventually start to force reticent departments and individual faculty to explore it more seriously.

Incentives to adopt and develop new practices. Embedded in a plethora of the policies and practices discussed previously were a number of influential incentives that impacted changes in faculty practice toward learner-centered teaching and learning. This included the creation of the teaching professor role and promotion track at UMW, the status of being selected for a fellowship and the small stipend that accompanied it at ECSU, as well as the opportunity for faculty at both institutions to teach class in new, cutting edge, and technology-rich active-learning classrooms. Additional incentives are being explored and proposed including some course release time for faculty who are actively converting courses that have been traditionally taught to learner-centered.

As one of the most influential incentives for faculty in higher education, it is important to address tenure and promotion guidelines. What emerged from this study, however, is while there has been some discussion about tenure at both schools, a significant valuation and emphasis on research in promotion and tenure guidelines have remained, by and large, unchanged. This is a roadblock, several participants pointed out, that still exists at their research-intensive institutions and limits the amount of attention some faculty will spend on teaching. As one senior tenured faculty member admitted, in the current award system, junior faculty face significant hurdles if they are considering

embracing the learner-centered paradigm. He theorized that this would be the case for him too if he were in the early part of his career:

> I think if I had been pre-tenured, it would have been a lot more difficult because of the time it takes. It's a bit of a risk. Things could really go south, especially for somebody who maybe doesn't have all the tools yet to know what works and what doesn't work. Changing up the paradigms like that can certainly affect one's student evaluations, which are heavily viewed for promotions and tenure and things like that. Yeah, it would have been a risk; much more so than for me being an old senior fellow.

This likely explains that while there were tenure track faculty represented in this study, the majority of participants either already earned tenure or were working in non-tenure track positions.

The paradigm changes taking place at both institutions, however, is still in its infancy stages and leaders acknowledged that changes in promotion and tenure would provide significant incentives for more tenure track faculty to change their own learner-centered teaching and learning practices. At UMW, the new department has amended promotion guidelines for teaching faculty and has been aggressive in offering not only tenure track positions but also outright tenure to highly profile candidates. As the chair explained, they "…launched a search and we could hire up to three people, and we made it possible for people to be hired with tenure."

"There is a tenure change movement underfoot, not in my lifetime, but it will happen," one participant predicted with mix of optimism and disappointment. I hope she

is right. Though both institutions represent significant adoptions of the learner-centered paradigm by current standards, the next step will have to include looking at this important topic.

Effectiveness.

3. What organizational structures and policies are most effective in supporting faculty use of learner-centered teaching and learning practices?

The history of higher education is littered with examples of well-intentioned change initiatives that were ultimately unable to be sustained for any meaningful period of time. If the adoption of the learner-centered paradigm is to successfully continue at the institutions studied here, then institutional systems and processes must be created and maintained to fully support them (Harris & Cullen, 2007; Ewell, 1997).

At both the University of the Midwest and East Coast State University, there were a number of organizational structures and policies that provided the necessary support for faculty in their use of learner-centered teaching and learning practices. These included policies and structures involving institutional leadership, finance and academic departmental influence and configurations, faculty training and development programs, physical facilities, and incentives to maintain learner-centered practices. Together, these organizational structures and policies were most effective in supporting faculty use of learner-centered teaching and learning practices.

Institutional leadership. For the participants in this study, the current climate in higher education is requiring that leaders think critically about where the field is and what needs to be done in order to remain relevant in light of changes taking place in society in

regards to personal finances, the economy, and education. Competition with other traditional institutions for students, as well as a proliferation of online educational opportunities that are challenging long-standing educational models and practices, is forcing leaders to think critically about their institution and its future. Informed by state and board directives and congruent with the strategic plans that were created to guide each institution, identifying and communicating what is distinctive about an undergraduate education at their institution becomes paramount at a time like this.

For both of the institutions studied here, the incorporation of the learner-centered paradigm and active-learning courses was not only responding to calls for a new paradigm, but was meant to introduce one significant way that they could differentiate themselves from others. This is particularly important at a time when many traditional brick and mortar institutions are feeling somewhat vulnerable in what has become a rather unstable educational marketplace. "We need to figure out how we're better, or what value we add as opposed to a massive open online courses," one faculty member at ECSU shared with me about one reason why the learner-centered paradigm has been embraced by many at her institution. For many leaders, including the Provost at that same institution, the learner-centered paradigm change taking place there and the investments that they were making to support these practices did add something to the undergraduate experience there that could not be replicated in other emerging formats:

> I said one of the things that sold this was the value we added to face to face. You could imagine replacing sitting in a big lecture hall with sitting in front of your

> computer screen, but you cannot imagine replacing sitting in a TBL classroom with sitting in front of your computer screen.

As a new signature of the undergraduate experience there, this differential is being articulated widely to both student and faculty audiences both inside and outside the institution. It is one significant way, ECSU communicates to the public, that a degree from that flagship university has added value.

The very public and unwavering support by institutional leaders for the learner-centered paradigm was critical for achieving buy-in from early faculty adopters. While their advocacy through policies and structures was important in these early stages of paradigm change, this research has revealed that it does not lessen over time. Instead, faculty who are in the midst of teaching learner-centered courses, continue to value leadership support and find that it motivates them in their teaching efforts and helps them to persevere through times of professional difficulty or challenge. As several participants were quick to point out, learner-centered practice is difficult work and though early challenges lessen over time as the learning curve becomes less pronounced, it will never be easier than utilizing traditional instructor-centered practices like lecturing.

By the nature of their role at the university, institutional leaders at all levels of the organization often set the tone for what can and should be expected in regards to teaching. The value that they placed on it was communicated to practitioners in a variety of formal and informal ways. This included the actions they displayed that were supportive of learner-centered initiatives, the words they chose to describe the importance of teaching, the policies they approved that incentivized and supported practices, and the

structures that they helped create that provided needed intellectual and physical infrastructure. When done effectively, evidence of backing from leadership was meaningful to faculty as they felt supported in their work and confident that their time and dedication spent on teaching was not for naught. "There is a focus on teaching here that is significant," one participant opined about the vision of the leadership at her university, a sentiment that was shared by participants at both institutions. This focus makes her feel valued and validates her use of learner-centered practices, the time that she commits to make it possible, and her scholarship focusing on teaching and learning in the sciences.

Through policy authorizations, structural approvals, strategic planning initiatives, or by controlling finances, in the course of their work, institutional leaders directly or indirectly influence many, if not all, of the policies and procedures that ultimately support faculty practice. Several that emerged in this research will be discussed further.

Finance and academic departmental influence/configurations. In higher education, deans and department chairs are always advocating for budgets that maintain or increase the funding that they have available to sustain current practices and to introduce new initiatives. This has become especially true in the modern academy as budgets at many institutions have either stagnated or have increased in relatively small percentages during the challenging financial climate that higher education is operating in. This was certainly the case at both institutions studied here where competition for dollars and resources to fund and support programming throughout the campus is fierce.

One way to initiate and support faculty in their teaching efforts is through purposeful funding structures and policies that can often direct attention and effort toward the use of desired practices. At UMW, for example, a unique funding strategy tied revenue to the number of students in classes in concert with a formula that increased the amount of money colleges and schools received for non-majors. As one participant explained, the funding formula provided the college with 25% of a student's tuition dollars for classes taken by those in their majors, but 75% of tuition dollars for courses that non-majors enrolled in. This was an intriguing caveat in a policy that some posit was one impetus for a greater attention on teaching throughout the university:

> The idea is that the 25%, we can tap that revenue source for doing student services and all that kind of things, and the 75% is to pay for the actual teaching of the classroom. That incentivizes every single dean on this campus to really care about teaching and care about students coming in wanting to take their classes.

Therefore, in order to benefit the most from these financial incentives, colleges and departments at UMW increased their investment in teaching and learning initiatives and created policies and structures at the college and departmental level that would enhance the learning experience for students and support the faculty in their teaching.

In the College of Science, both new and existing finances were dedicated to the creation of the new department, the renovation of new, collaborative office space to house the department members in, and the appointment of an inaugural department chair. This structure created an important space for faculty interested in teaching to come

together and be supported as they commit to teaching, continue to hone their craft, and research the outcomes of their teaching and learning initiatives. This was an increasingly important structure for those who were practicing learner-centered education:

> There are a lot of people there that kind of roll their eyes when I start talking about education. I wouldn't say there is universal acceptance at all, but at least here, this is kind of a safe community of like-minded people.

Putting faculty together in a department structure gave them a voice that is louder and more supported than individual voices spread throughout the college. This was particularly valuable in the early days of paradigm change because learner-centered faculty are likely going to be a minority of campus.

Born out of this critical department were additional structures and policies around the hiring of teaching professors, multiyear contract terms and promotional tracks for these academics, and the development of an appropriate distribution rubric that mirrored those of tenure track faculty in content but realigned percentages in a way that recognized their emphasis and expertise on teaching. For one teaching professor, 80% of what he is evaluated is focused on teaching, 10% is on service, and 10% is on scholarship. The result is meaningful to him as it supports his learner-centered teaching efforts, but also provides him an opportunity to be involved on a variety of college and university committees and continue to make scholarly contributions in either his discipline or in teaching and learning:

> "…I'm actually helped in the grand scheme of things. I am incentivized as I should be. I love that about this place, that it is not one size fits all, it's according

to your appointment, that's how the numbers get scaled. It still leaves me inspired to do the scholarship. A, because the culture is becoming very supportive of it, but B, because we value it. We talk about valuing it. I can see how it's synergistically relevant for me and what I do.

Another influential policy at the department level is the inclusion of teaching professors in the formal mentorship of new tenure track faculty. Paired with a research faculty colleague, these mentorship teams are meant to provide support for junior faculty as they embark on the tenure process at UMW. Including teaching professors in this program not only further validates their role in the college but also is a nod to their teaching expertise. Their work with the college's newest faculty is a wonderful opportunity to reinforce the commitment the community has made to teaching and learning, has introduced them to the learner-centered paradigm and active-learning, and has connected them with colleagues at the institution who can support them in their own teaching practices.

Faculty training and development programs. Even for the most seasoned of educators, practice in the learner-centered paradigm presents a number of significant intellectual and practical hurdles. As a result, structures and policies around training and development of faculty were important for both changing faculty practices to align with the learner-centered paradigm as well as providing ongoing support for their work.

At ECSU, required training via the fellowship program and other related initiatives provided fellows with an opportunity to explore the learner-centered paradigm and active-learning strategies in depth with a cohort of colleagues over the course of an

academic year. As one of the former fellows explains, this experience provided the necessary background and support needed to adopt the learner-centered paradigm and implement changes in her teaching practices:

> There's also a structure, a training program. You should never try this without training. It's so hard, and so discouraging. I think having the training programs and having a core of people go through it with you who are having exactly the same challenges is so important.

In preparing to convert their own courses and teach in the active-learning building, this experience provides faculty with the tools as well as an established support system to assist them as needed once the formal training period concludes. As one participant told me, following her experience as a fellow, she has relied on her colleagues for assistance and offers to do the same for anyone else needing some additional support with their learner-centered teaching:

> I offered to everybody who's trying this on our campus, "If you just need someone to listen come talk to me." I can tell you loads of what not to do. That helps, that helps to know that it's going to be okay.

Recently, she found herself offering this support to a colleague who was struggling with teaching a new active-learning course:

> We had somebody this past year, redesigning an intro course, not in my department, in a different college actually, which is one of the cool things. You get to meet people; very interesting people in different disciplines. He’s well established and he was in charge of this. I said, "How's it going designing this

> course?" It was the first one and he said, "Horribly. It is horrible." He said, "It's not even a train wreck. The wheels have come off. It's horrible."

As she has come to know very well herself, what this colleague is describing is a common experience for faculty teaching learner-centered courses and she shared this with them:

> You know, that's pretty normal. That train wreck feeling, especially if you've never done this before, that's normal. That's kind of how it works. It's not under your control. It's really different, but the key is to have to understand that that's normal. It's not that this person is a terrible teacher.

The outcomes for these training structures have been very successful and provide evidence that faculty are benefiting from this support. At ECSU, for example, participants from the Center for Teaching estimate that over 85% of the faculty who participated in the fellowship have continued to teach learner-centered courses.

Ongoing training was critical for supporting faculty as they gained greater experience in learner-centered practices. Participants at both institutions repeatedly highlighted the role that their centers for teaching played not only during their initial orientation to the learner-centered paradigm but long after as well. For one participant, this ongoing support has included advanced training sessions on the use of technology in active-learning classrooms, designing learner-centered instructional materials, identifying and planning successful activities for the active-learning classroom spaces, and forming successful groups.

Additional opportunities for ongoing support and professional development at UMW was through The National Academies Summer Institutes on Undergraduate Education regional that now takes place on their campus. This week-long institute is a great opportunity for faculty at UMW to learn with and from colleagues from across the region who are similarly committed to adopting learner-centered teaching and learning practices. Many of the participants in this study get involved in the institute by presenting sessions. This not only allows them to share their knowledge and experience, but provides an opportunity for them to create additional supports outside of their own institution.

Physical facilities. For the participants in this study, successfully teaching learner-centered courses requires physical structures that support a faculty member's use of learner-centered teaching and learning practices and they all credit the new active-learning building at being critical to their success. At both institutions, the significant investment that their institutions made in the construction of active-learning, technology-rich classrooms provided the space and resources that faculty needed to move beyond lecturing and assume the role of guide. As many participants noted, the space is not conducive to the instructor-centered paradigm and to rote lecturing. Instead, the group seating, the white boards, and the technology, to name a few critical features, serve to encourage student engagement with the course material and their peers and support faculty in their use of learner-centered methodologies.

Making the investment they did to add on to their two pilot rooms with a significant number of active-learning classrooms in their new buildings, communicated

support to faculty already teaching learner-centered courses and further allowed a critical number of both students and faculty to experience teaching and learning in them. As one participant noted:

> In the beginning, in 2007 or 2008, we had these two classrooms of that general sort. Very few students had ever experienced this at all. Now we've got 15 classrooms over there. Some of them are pretty big, and so thousands of students every semester go through there.

By having so many students experience learner-centered classes, a culture change within the student body is starting to take place. "It's nothing unusual," one participant has found, noting that that is how students now feel as more and more undergraduates experience learner-centered classes. "I think the resistance and the expectations are gradually sort of softening." This conclusion is supported by a recent project that a participant from the Center for Teaching at UMW recently completed and shared with me. He found that many students had not only experienced a single learner-centered class, but had now done so numerous times:

> We have students who have been the recipients of active learning...we'd had someone who'd been into nine courses in these spaces. A number of students who had been in there five, six, seven times and they experienced them differently from different faculty.

This further supports faculty in their learner-centered teaching as students not only become more accustomed to these courses and the increased expectations that learner-centered courses have, but also less resistant. Over time, there has started to be a

growing demand for learner-centered classes as more and more students come to experience the benefits associated with being engaged in their own learning.

The popularity of these spaces and the demand that has arisen as a result is causing some new quandaries, however. As one participant from UMW explained:

> You've got this highly used space that is frankly very difficult to get in right now from the standpoint of opportunity. Between work hours, 8 until 4 or 5, or something, it has about a 70% occupancy rate which, if you talk to your facilities people, is very high. Very high student contact hours. We probably have 270 different instructors who are using the space.

At ECSU, though the building is brand new, they too are finding that requests for their seven active-learning classrooms are starting to quickly outpace available space. "There's definitely a very strong demand for those spaces and people wanting to use them in this collaborative learning mode," one faculty member has found.

Since many of the active-learning class spaces were constructed to accommodate large groups of students congruent with SCALE-UP, STEM courses with high enrollment are overrepresented in these buildings and this has tended to preference the sciences. As a result, faculty in other disciplines are having difficulty finding an opportunity to teach in these spaces. To assist with this, there is an effort to adapt other, more plentiful spaces on campus, so that learner-centered courses can more easily be taught there as well:

> There's a push to try and develop some smaller sized classrooms and renovate them…They definitely don't have all this really nice hardware, but they have everything you need for this active-learning kind of classroom, especially the

team style: round tables, white boards, ability to project your own device to the main screen for the room.

This is a worthy model for other institutions to explore as well. Though both institutions here had the resources to be able to commit to significant construction projects, this is not the case at many institutions and the perceived costs that paradigm change could entail could prevent meaningful efforts. As several participants did point out, however, practicing learner-centered teaching does require special spaces and there is no need to wait for similar structures. Reframing the role that a faculty member plays in a classroom or implementing learner-centered practices can be done in any space though there are certain attributes that this research found that more effectively support faculty in their work. As such, like the institutions studied here are exploring, there are lower cost alternatives that institutions can implement to support their faculty member's use of learner-centered teaching and learning practices. As one faculty noted, "However you can get it so there's not the physical, 'I'm supposed to be facing forward and paying attention to what you communicate to me.'" Another participant recommends that faculty, "Just try to build that a little bit into their classrooms and just add to it over time." This is a reasonable approach for faculty who are not in a position or who do not have the resources to dive right in. In his experience, when this approach is taken, "…I think it becomes clearer to the instructor that this probably is a good thing. It's certainly more fun to teach that way."

Incentives to maintain learner-centered practices. Though not yet plentiful, two incentives emerged in participant interviews that support faculty members' use of

learner-centered teaching practices. One is additional teaching credit for those offering learner-centered classes. Acknowledging the extra time and effort that learner-centered classes entail, this incentive allows faculty to spend more time on educational design and class prep.

Another incentive is the bestowing of awards that publically recognize teaching and singles out those that are doing well. "We have an Outstanding Teaching Award that gets the same status as the Outstanding Research Awards," the former provost at ECSU told me. Though research is still highly valued and rewarded there, "…it's a place that still values good teaching." These awards are meaningful to faculty who not only appreciate the recognition for their hard work and excellent teaching but feel supported in their learner-centered work by faculty, staff, students, and alumni at their university.

The role of culture. The case studies presented here provide a detailed view into the learner-centered movements taking place at the University of the Midwest and East Coast State University, two large, public research institutions seeking to transform undergraduate education. The findings that emerged through this research, highlight the challenges of paradigm change and the nuanced way that faculty make teaching decisions that inform and guide their classroom practices. In addition to providing valuable insight into how organizational structures and policies impacted and supported changes in faculty practice toward learner-centered teaching and learning, the findings suggest that culture was a significant catalyze for change.

Although both institutions maintained cultures that were unique and congruent with the mission and values of their universities, a similar culture that focused on

teaching emerged on both campuses. Initiated and nurtured by administration and faculty leaders, and made up of a number of different elements, these cultures sent substantial messages about the importance of teaching and learning that filtered down through all layers of the organization. Utilizing cultural lenses that were influenced by a number of personal and organizational factors, faculty made meaning of the overt and covert messages that the dominant culture conveyed. It was these conclusions that ultimately influenced the decisions that the participants made around learner-centered teaching and learning.

This research found that these emerging cultures that valued teaching and learning both influenced the organizational structures and policies identified in these case studies and was influenced by them. This reciprocal relationship had sustained the emerging paradigm and, if managed well, will continue to cultivate meaningful change with additional faculty beyond the innovators and early adopters that are represented here.

Conceptual Framework Reconsidered

The conceptual framework that was utilized at the start of this dissertation provided important context for the research questions that initiated this study and, extrapolated from the interviews of the participants, are valuable perspectives on how college faculty view, experience, and interpret the organizational policies and structures of their institution. When taken together, these considerations often served as an essential indicator of the adoption, implementation, and sustainment of the learner-centered paradigm in their current practice. As such, with the outcomes that emerged in the case studies described herein, I am suggesting that the conceptual framework be

reconsidered and ultimately amended to reflect several important findings that will be discussed in greater detail to follow.

As can be seen in figure 2, this reconsidered framework recognizes the critical role that organizational leaders, including those at the senior level, play in the large-scale adoption of the leaner-centered paradigm. By the nature of their positions and the influence that they can wield within a complex university organization, they are able to either create and/or back organizational policies and structures that can positively hasten and support the leaner-centered paradigm and its related practices. In addition to the structures and policies indicated in the original framework, this also includes the addition of "incentives" along with the "financial resources for teaching and learning innovations." Incentives for the faculty interviewed here, however, were not always financial in nature. Also included is any financial investment that is made in learner-centered physical facilities and technology. Conversely, "faculty involvement in planning and policies to improve teaching and learning" was deleted in this version, as this indicator was not supported by the findings.

An important impetus for supporting the learner-centered paradigm by leaders within the organization, and also influential on an institution's policies and structures, was strategic planning outcomes or strategic initiatives taking place and articulated at each institution. As such, this is now indicated as well.

At the department level, two important findings are included in the reconsidered framework. This includes the observed practices and potential influence of faculty colleagues and the expectations and availability of different faculty classifications.

Deleted is “assistance with new pedagogical practices.” Though valuable in general, assistance with implementing the learner-centered paradigm and practices did not come at the department level.

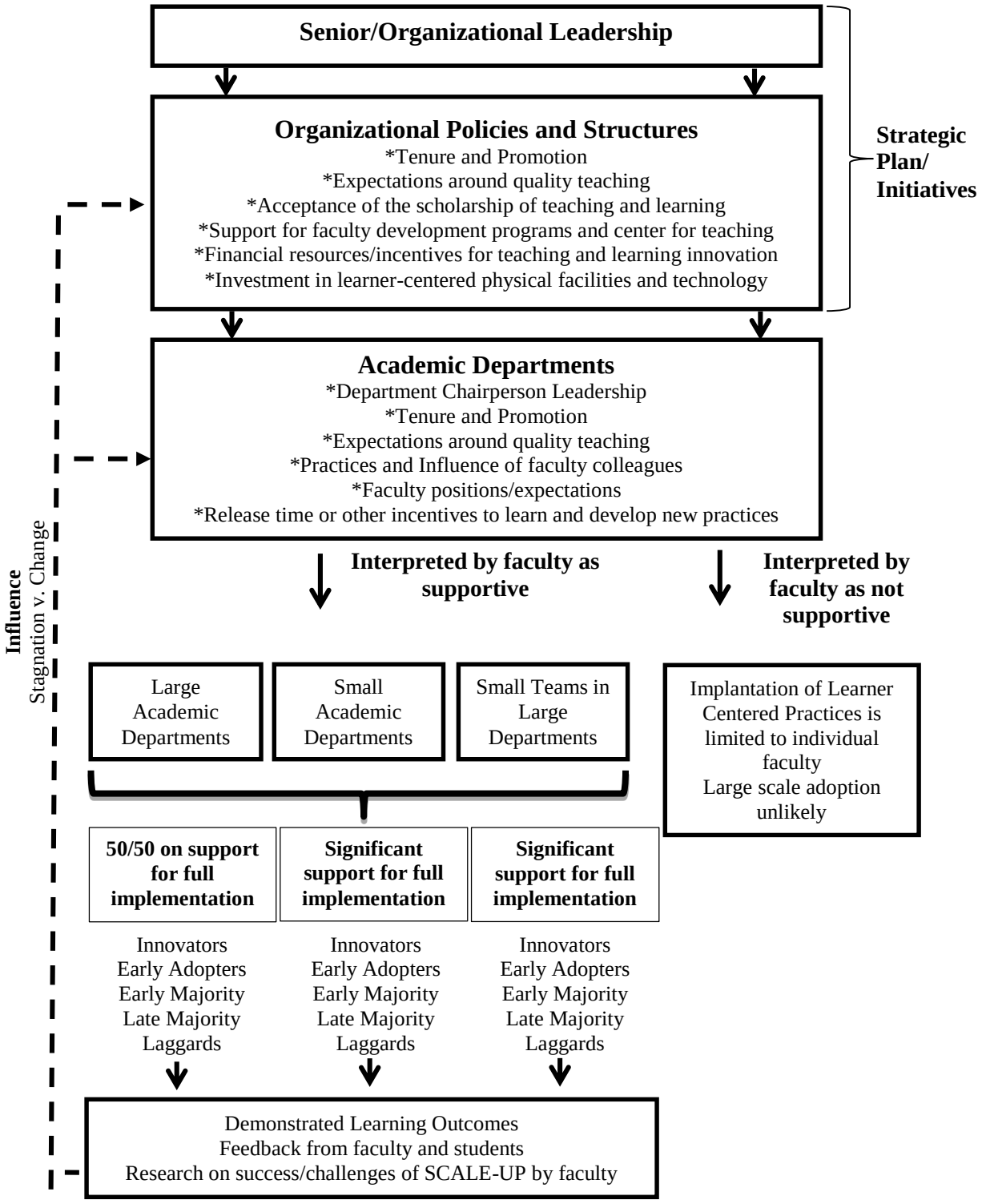


Figure 2. Conceptual Framework Reconsidered

Implications and Recommendations for Practice

The case studies discussed here provide two examples of how faculty implementation of learner-centered teaching and learning practices is influenced by organizational structures and policies. Extrapolated from the findings that emerged through this research are a number of implications and recommendations.

Support and advocacy from institutional leadership is critical for the initiation and sustainment of paradigm change. Findings suggest that university presidents and other senior leaders play active roles in the early stages of successful learner-centered adoption processes. When guided by strategic planning initiatives, or a desire to create a signature undergraduate experience at their university, their public support is important for not only providing the resources needed to facilitate the change effort, but to the creation of policies and structures that communicate and support a focus on learning and sustain learner-centered teaching. Moving beyond rhetoric and avoiding mandates, both of which could hinder meaningful change efforts, it is important that leaders and early adopters throughout the university are equally empowered to be active in the paradigm change taking place. These leaders are often able to influence the teaching choices of their peers and are critical for sustaining changes in teaching and supporting learner-centered practices.

Academic departments can create learner-centered cultures that encourage and support learner-centered teaching practices. Faculty are constantly assessing both overt and covert policies and structures and for many in higher education, it is from the academic department that they truly experience the university. Department chairs, in

concert with other respected faculty peers, inform departmental culture and provide the lenses from which faculty make sense of the university and their place in it. It is from these places and through these lenses that faculty interpret the level of support that exists for learner-centered teaching. Policies and structures specific to the department, such as teaching assignments, faculty titles, and evaluation standards, can be purposefully crafted to encourage, value, and support learner-centered teaching and learning practices.

Provide meaningful opportunities for faculty to become exposed to the learner-centered paradigm and create ongoing training and professional development to support related teaching and learning practices. How a faculty member is first introduced to the learner-centered paradigm was a critical moment for our participants and a time when they often decided to either explore it further or dismiss it out of hand. Being intentional in the creation of policies and structures around how the paradigm and its related practices is introduced is significant and when done well can better facilitate change. This requires a strategic approach that acknowledges a scholar's respect for empirical evidence by utilizing current research on the science of learning and sharing the educational outcomes that students achieve when more active and engaged in the classroom. Centers for Teaching are perfectly poised to facilitate this training and including faculty peers, particularly those in similar disciplines, adds additional credibility. Modeling a learner-centered classroom is incredibly influential as this helps to demystify active-learning pedagogy and confirms through experience that these practices facilitate legitimate learning opportunities.

Equally important is the ongoing training and professional development of learner-centered faculty. The creation of space for faculty to learn new skills, share ideas, process accomplishments, and solicit feedback on challenges is highly valuable to those who are teaching learner-centered courses. These can be formal seminars and trainings, informal consultations, or even the availability of written materials and current research related to the learner-centered paradigm and active-learning techniques. All of these opportunities and resources serve as important support structures for faculty as their experience in the paradigm deepens and they continue to teach learner-centered courses.

Invest in the creation of physical active-learning structures. One of the most influential structures to emerge in this study were the physical active-learning classrooms that were constructed at UMW and ECSU. These rooms supported faculty already committed to the learner-centered paradigm in their practice as well as influenced change in those that had not yet embraced active learning. Both of these landmark buildings were eventually made possible following the creation of pilot spaces and institutions interested in paradigm change should consider following a similar path by evaluating their current spaces and identifying buildings and classrooms that could accommodate some renovation. Investing in the overhaul of even a couple of rooms with all of the attributes of SCALE-UP draws a lot of attention from faculty, staff, students, and outside observers and will provide enough classroom space to accommodate innovators and early adopters. If cost prohibitive at the moment, even small and less costly changes can be quickly implemented that will positively impact learner-centered practice. Purchasing white boards or chairs with attached desks that are on wheels, for example, supports

active learning and allows students to more easily move around the room, create groups, and participate in peer to peer teaching and problem solving in ways that fixed seating or more traditional classroom settings would not allow.

Regardless of the approach taken, assessing these rooms and the outcomes that are achieved through learner-centered teaching and learning practices is critical. The findings gleamed from this empirical research should be shared widely as it could support future investment in physical structures and positively influence faculty to adopt learner-centered teaching and learning practices.

Create policies and structures that provide meaningful incentives for faculty to adopt learner-centered teaching practices. If the learner-centered paradigm is going to be adopted by a significant percentage of the professoriate, then faculty at all ranks need to be incentivized to do so. Though several incentives were identified in this research, and more should be added, it would behoove institutions to identify and implement others that are congruent with their unique cultures and are meaningful to their faculty. These rewards and incentives would encourage change in teaching as well as provide the support needed to sustain it.

The most significant incentive in higher education is in promotion and the awarding of tenure. As such, promotion and tenure guidelines, as well as the actual tenure decisions that are made at the university, provide clear indications of what is valued at the institution and what outcomes will lead to tenure. This, unlike any other incentive, will influence where a faculty member will spend the bulk of their time and

energy. Elevating teaching and setting clear expectations around teaching effectiveness in promotion and tenure, then, is very important.

At research intensive universities, like the two that are studied here, the production of research continues to be highly valued in promotion and tenure decisions. One way that this emphasis could be leveraged to increase the use of learner-centered practices is by encouraging and embracing the scholarship of teaching and learning. Creating policies that validate the scholarship of teaching and learning as meaningful and valuable research could, as Hutchings et al. (2011) suggest, advance the institutional agenda of paradigm change in really significant ways.

A related topic in the modern academy is issues of workload. This is becoming more prevalent as faculty find themselves pulled in a number of different directions in order to satisfy growing expectations around research, teaching, and service. In fact, at the writing of this dissertation, The National Science Foundation has announced the funding of a three-year experiment looking at workload and workload dissatisfaction and are in the process of recruiting departments in STEM and the social sciences to participate. Demands on faculty time are particularly relevant to this dissertation because participants repeatedly confirmed that learner-centered teaching and learning practices do take more time to prepare and implement. Policies and structures that address this topic and provide related incentives will be particularly valuable.

Strategically connect learner-centered practices and initiatives taking place across campus. The research conducted here focused on the learner-centered paradigm change taking place in the academic classroom. As the literature review revealed,

however, active-learning practices can take place throughout the campus and this was certainly the case at UMW and ECSU where students had the chance to experience a number of high-impact learning practices both inside and outside of the classroom. Both universities offered robust active-learning opportunities through service or community based learning, first-year seminars, learning communities, study abroad, and internships, to name a few.

In my visits and interviews, however, I had the impression that these initiatives and programs operated in silos, each often acting independently of each other. Strategically connecting these learner-centered initiatives will not only strengthen each of these programs, but will further efforts for sustaining culture change and increase the likelihood that the learner-centered paradigm will be institutionalized.

Limitations

One common critique of qualitative research, and case studies in particular, is that the findings are not generalizable (Merriam, 2009). Merriam (2009) points out, however, that a lot can be learned from the particular and this study does not seek to generalize but rather to better understand the experiences of faculty at these two institutions. It will be left to the reader, then, to decide whether the findings here are applicable to other contexts. This is particularly important since the two institutions studied here are somewhat similar in that they are both large, public universities with high research activity. The findings may or may not differ if this study were to be conducted at private institutions, schools that are smaller in size, or colleges and universities that are less

research intensive. Future research could examine these same research questions in greater detail at institutions that differ in profile from the ones studied in this dissertation.

Despite the similarities in their size and Carnegie classifications, UMW and ECSU are at different developmental stages in their learner-centered movements. Involved in learner-centered paradigm change for a longer period of time, UMW has had more experience, time, and space to create or enhance influential organizational policies and structures that have not yet been able to emerge at ECSU. Being able to teach in SCALE-UP classrooms for several more years than their colleagues at ECSU, allowed the innovator and early adopter faculty at UMW to articulate a more nuanced, historical view of the learner-centered movement both at their institution and beyond. As pointed out earlier, UMW continues to attract attention for their learner-centered initiatives and many of the participants are asked to make campus visits or present at conferences to share their experiences or their research in the scholarship of teaching and learning. This has provided many participants with a more broad view of the learner-centered paradigm and how it is emerging across the globe.

While these differences may have impacted some of the findings here in regards to institutional policies and structures, I found that the differences that emerged in teaching experience were often mitigated by the extensive training that faculty at ECSU participated in. The fellowships that each of the participants completed, provided an in-depth introduction to the learner-centered paradigm and a support structure that was particularly meaningful to them as they continued their practice. This lessened the

learning curve that many of the faculty participants at UMW went through as they often came to understand learner-centered practice through trial and error.

Additionally, although this proposed research examined how faculty implementation of learner-centered teaching and learning practices is influenced by organization structures and policies, this is not an explicit study about organizations, organizational behavior, or organizational management. Scholars with a research agenda that would want to leverage the use of these lenses could build upon the findings that have emerged in this study.

Suggestions for Future Research

In addition to the suggestions articulated in the limitations above, there are several other areas where future research could deepen our understanding of how faculty implementation of learner-centered teaching and learning practices is influenced by organization structures and policies.

- The research completed for this dissertation captures the experience of these institutions and their faculty at this particular period of time in their adoption process. Both are still in the early stages of paradigm change and policies and structures are still emerging. Revisiting these institutions in the future would be able to not only confirm that the initiatives are still taking place, but would provide valuable insights into the infrastructure needed to sustain paradigm beyond the innovators and early adopters and incorporates the early majority.
- The institutions that were included in this case study had already made significant commitments to the learner-centered paradigm via their new active-learning

classroom spaces and the findings here suggest that these structures were particularly impactful. Since not every institution would be able to invest so heavily in new construction, research conducted at less resourced institutions would provide some additional insight into the research questions.

- It is important to note that the faculty participants in this study had already decided to adopt the learner-centered paradigm and were actively teaching learner-centered courses. Future research that explored the experience of those that decided not to adopt the new paradigm, or who had abandoned their attempts to do so, would deepen our understanding of how policies and structures do and do *not* impact change or support learner-centered teaching and learning practices. This would provide an even more nuanced understanding of the research questions posed here.
- Even though issues of diversity have been long been topics of discussion in higher education, recent events in cities throughout the United States and on college campuses across the country, highlight the fact that there is more work that needs to be done to advance diversity, inclusion, and equity in the academy. Literature suggests that women and underrepresented faculty are more likely to incorporate learner-centered practices in their classrooms and congruent with this, over 60% of the participants in this study identified as women. An ethnographic study that concentrates on faculty who embrace the learner-centered teaching could explore this phenomenon in greater detail and may be able to determine if a connection

could be made between advancing learner-centered teaching and learning with the advancement of diversity, inclusion, and equity.

- Lastly, the recent proliferation of non-tenure track faculty at colleges and universities in the United States is a growing problem that is drawing the attention of scholars who are concerned with the ongoing exploitation of contingent faculty. Often regarded as second class institutional citizens, non-tenure track faculty are often underpaid, lack academic freedom, and have no professional stability (Bérubé & Ruth, 2015). While it was not the focus of this study, the creation of the teaching professor positions at UMW is an intriguing faculty structure that potentially addresses some of the concerns that have been emerging in higher education. With promotional opportunities and expectations around scholarship and service that mirror those of tenure track faculty, I would suggest that this model should be further explored in future research studies.

APPENDIX A

RESEARCHER BACKGROUND

If there was one question I was dreading most while anticipating my admission interview for the UMass Boston doctoral program, it was any inquiry related to my research interests. I had a myriad of interests and a number of half-baked ideas swimming around my head, but there was not that one topic or one question that was driving me to graduate school. Therefore, when the question was eventually posed by one of the faculty members, I quickly threw out a number of vague ideas while concurrently attempting to gauge their reaction to the wide range of topics I was presenting. Though I felt that my indecision was obvious and feared that this may negatively impact my candidacy, my two interviewers pleasantly nodded affirmatively to each potential area of study and even expressed interest in some of the topics I was sharing.

I often say to those that ask, that I did not find my topic, but that the topic found me. This chance encounter took place during the spring semester of my first year when I was in my advisor's class on teaching, learning, and curriculum. Introduced to the most prolific scholars on these topics, I found myself devouring the large reading list and enthusiastically highlighting books and articles from critical thinkers like Boyer, Dewey, Freire, hooks, and Barr and Tagg. As I would hear over and over again from the participants in this study, I immediately connected with the work of these writers and was intrigued with the calls that many in higher education were making for the adoption of the learner-centered paradigm. It all just made sense to me and as I became more

familiar with the science of learning and reflected on my own educational autobiography, I immediately became convinced of the benefits that this could have for a majority of students in higher education.

Several weeks into the class, Dr. Saltmarsh shared a past experience he had at a secondary school that he visited on a couple of occasions. Located in a large urban area and serving the diverse learning needs of students who were often underprepared and behind grade level, the school was a collaboration between the public school system and one of the city's local colleges. Employing a variety of learner-centered teaching and learning practices, the school boasted an impressive record of success and had garnered a lot of attention and accolades for the educational outcomes that the students were achieving. Students at this school, for example, were passing the state graduation exam and earning admission to a variety of colleges and universities at rates that far outpaced their peers throughout the city.

Dr. Saltmarsh shared his observations with us, describing a dynamic learning environment that was dissimilar to traditional high schools classrooms. All over the building, including the hallway, students were actively engaged in their assignments, often working collaboratively in small groups while a teacher stopped by to guide them in their learning. As we compared this environment to those that we were most familiar with as students ourselves, my classmates and I tried to imagine the scene that he was painting for all of us.

On one visit, Dr. Saltmarsh noticed a group of students sitting at a table in the corner of the room. Unlike the students he had seen elsewhere, these students were

quietly studying and taking notes on their own, books open before them. Struck by the stark contrast that this scene provided to what he had observed elsewhere at the school, he asked his guide what those students were doing and was told that the teachers were preparing them for college. Past graduates, the guide explained, sometimes struggled when they went to college and had to learn in more traditional classrooms. After spending years as students in a learner-centered school, the group that was in the corner were preparing to graduate and needed to become reoriented to an instructor-centered paradigm. This ultimately required that they become more passive learners, comfortable in less dynamic classrooms than those that they had thrived in during their middle and high school years.

I remember this story so well because this was the moment that my topic found me. The fact that these students needed to become less active and less engaged in order to be prepared for the average college classroom was troubling and I immediately met with Dr. Saltmarsh to share my reaction and to talk trough my research ideas. I had a lot of questions and I wanted to learn more about the learner-centered paradigm. One year after my interview, I finally had a topic I was passionate about.

I have worked as an educator in higher education for my entire professional career, and while I am now working in the student affairs division at Stonehill College as the dean of students, I spent my first 15 years in academic advising at the University of Notre Dame, Bentley University, and Stonehill. I love my work and enjoy providing both challenge and support to students throughout their college career as they discover

interests, identify goals, and experience failures and successes both inside and outside the classroom.

My professional identity as an educator, my work experience as an administrator in academic and student affairs, and my studies in higher education, greatly informed my research and provided the lenses through which I made sense of the data I collected. My familiarity with the academy and my comfort with working with faculty was helpful in a number of ways as I prepared for my study, began the process of collecting data, and later interpreted my findings.

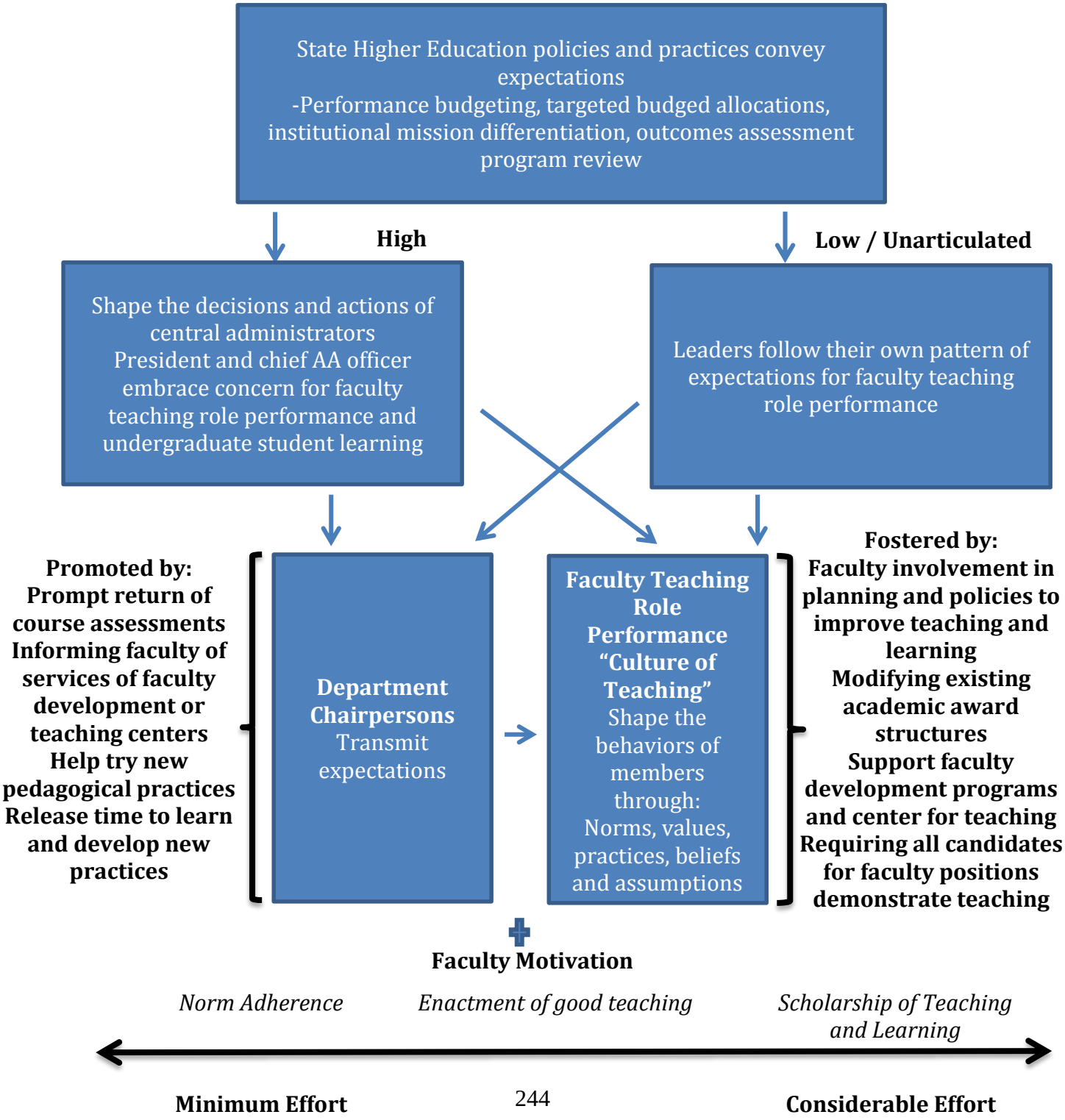
The research questions that guided this study required a thorough consideration of organizational policies and structures and an in-depth understanding for how they ultimately influenced faculty teaching choices. My past experiences and the expertise I have been able to hone through work and study provided a lot of insight into the findings but they may be limited by the roles that I have played in higher education and the types of institutions I have worked at. Outside of graduate school, I have only worked full-time at private institutions and although I have taught regularly at both the undergraduate and graduate level at these institutions, one of which is a public institution, I do not live day to day in a faculty culture. I have never been a full-time faculty member, never worked out of an academic department, and have never been subject to the tenure process.

Undoubtedly, the lenses that a faculty member would look through would differ from mine and would likely uncover additional questions and provide added analysis of the findings. I purposefully chose to conduct case studies for this very reason. I hope that the thick description provided herein provides readers, regardless of personal or

professional background, with an opportunity to make meaning of the data collected here and that additional findings will be able to be extrapolated that can inform their understanding of the topic and their own work.

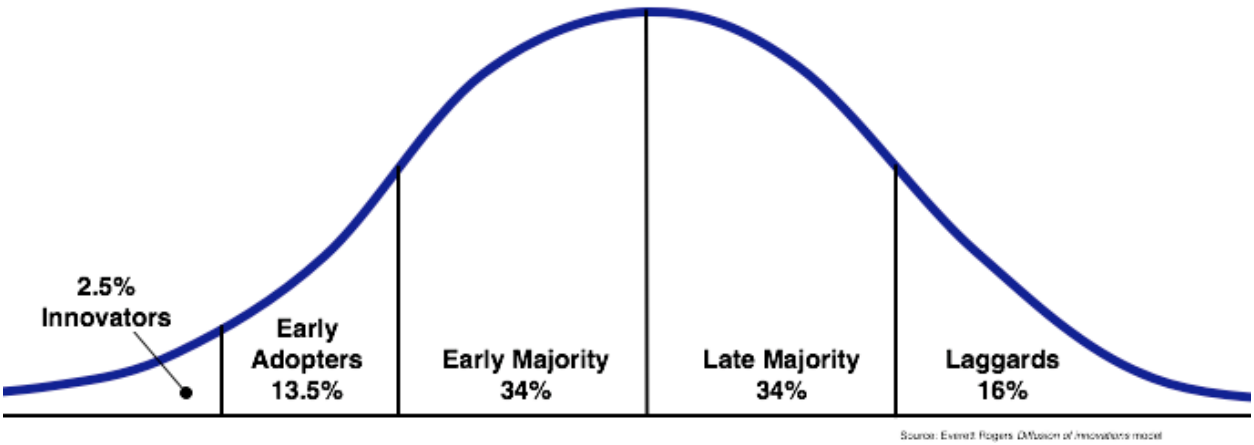
APPENDIX B

BRAXTON'S (2006) THEORY OF FACULTY PROFESSIONAL CHOICE IN UNDERGRADUATE COLLEGE TEACHING ROLE PERFORMANCE



APPENDIX C

ROGERS' (1995) ADOPTER CATEGORIZATION ON
THE BASIS OF INNOVATIVENESS



APPENDIX D

INTERVIEW PROTOCOL- FACULTY

Interviewee:_____ Date:_____

Time of Interview:_____ Place:_____

Thank you very much for agreeing to be interviewed as part of my dissertation research. As I noted in my correspondence with you, I am seeking to better understand more about the adoption of the learner-centered paradigm at your university and in your classroom. I anticipate that this interview will take between 45 and 60 minutes and I will be digitally recording this interview for verbatim transcription. I will not use your name or any other information that may identify you to readers and you will remain strictly anonymous. Before we start, do you have any questions about the study or the interview?

Questions

Introduction and General Background Information

1. Everyone's path to the professoriate is different. Can you please share with me what led you to become a faculty member?

Exposure to the Learner-Centered Paradigm

2. For many years, educators in higher education have advocated for the wide scale adoption of the learner-centered paradigm. When and how were you first made aware of the existence of the learner-centered paradigm?
    a. What was your reaction?
    b. Does the paradigm differ from what you had previously experienced as a student and teacher?
3. How would you describe what the learner-centered paradigm is to a colleague who may not be familiar with the philosophy?

Adopting the Learner-Centered Paradigm

4. Your institution has been identified in the literature as having successfully implemented the SCALE-UP program. Can you please describe how, from your view, this transformational change has taken place on campus?
5. What impact does the university's structures or policies have on your ability to adopt learner-centered practices?
    a. Which specific organizational structures and policies have been most effective in supporting your own use of learner-centered teaching and learning practices?
    b. How are these communicated to faculty?
6. For an outsider unfamiliar with the University, what evidence can one point to that supports the contention that the university is learner-centered?
    a. How are your claims of learner-centeredness described (if at all) in your promotion and tenure materials?

7. Who are some of the individuals on campus who can be seen as influential advocates for the shift?
8. What role, if any, have you played in facilitating this paradigm change?
    a. At the University, college, or departmental levels

Practice in the Learner-Centered Paradigm

9. In what ways have you adopted the learner-centered paradigm in your own work and how has this manifested itself in your teaching?
    a. What specific learner-centered strategies have you implemented?
    b. What has been most successful?
    c. What has not worked out as you had hoped?
10. What organizational structures and policies have the greatest impact on changes in your practice toward learner-centered teaching and learning?
    a. How are these communicated to faculty?
11. Reflecting back on your courses, how satisfied are you with your experience of using practices congruent with the learner-centered paradigm in your class(es)?

Conclusion

12. Is there anything I did not address in my questions that you think could be useful in understanding this issue more fully?
13. Is there anyone on campus that you would suggest I talk to in order to learn more about this issue?
14. Do you have any suggestions or questions for me?

Thank you for participating in this interview. Please know that all of your responses will be kept strictly confidential. If there is any addition information that you would like to share, or if I can be of any assistance after this interview, please do not hesitate to contact me using the information provided on the card I provided. I would also be more than happy to provide you with a copy of my completed study or an abstract if you would like.

APPENDIX E

INTERVIEW PROTOCOL- ADMINISTRATORS

Interviewee:_____ Date:_____

Time of Interview:_____ Place:_____

Thank you very much for agreeing to be interviewed as part of my dissertation research. As I noted in my correspondence with you, I am seeking to better understand more about the adoption of the learner-centered paradigm at your university and in your classroom. I anticipate that this interview will take between 45 and 60 minutes and I will be digitally recording this interview for verbatim transcription. I will not use your name or any other information that may identify you to readers and you will remain strictly anonymous. Before we start, do you have any questions about the study or the interview?

Questions

Introduction and General Background Information

1. Everyone's path to a career in academia is different. Can you please share with me what led you to become an administrator?

Exposure to the Learner-Centered Paradigm

2. For many years, educators in higher education have advocated for the wide scale adoption of the learner-centered paradigm. When and how were you first made aware of the existence of the learner-centered paradigm?
    a. What was your reaction?
3. How would you describe what the learner-centered paradigm is to a colleague who may not be familiar with the philosophy?

Adopting the Learner-Centered Paradigm

4. Your institution has been identified in the literature as having successfully implemented the SCALE-UP program. Can you please describe how, from your view, this transformational change has taken place on campus?
5. What impact do the university's structures or policies have on the ability of faculty members to adopt learner-centered practices?
    a. How did the then current structures and policies advance or hinder the adoption of the learner-centered paradigm?
    b. Did any structures or policies need to be changed?
    c. Which specific organizational structures and policies have been most effective in supporting your faculty's use of learner-centered teaching and learning practices?
    d. How are these communicated to faculty?
    e. How are your claims of learner-centeredness described (if at all) in your promotion and tenure materials?

6. For an outsider unfamiliar with the University, what evidence can one point to that supports the contention that the university is learner-centered?
7. Who are some of the individuals on campus who can be seen as influential advocates for the shift?
8. What role, if any, have you played in facilitating this paradigm change?
    a. At the university, college, or departmental levels

Practice in the Learner-Centered Paradigm

9. In what ways have you/your faculty adopted the learner-centered paradigm in your/their own work and how has this manifested itself in your/their teaching?
    a. What specific learner-centered strategies have you/they implemented?
    b. What has been most successful?
    c. What has not worked out as you had hoped?
10. What organizational structures and policies have the greatest impact on changes in the faculty's practice toward learner-centered teaching and learning?
    a. How are these communicated to faculty?

Conclusion

11. Is there anything I did not address in my questions that you think could be useful in understanding this issue more fully?
12. Is there anyone on campus that you would suggest I talk to in order to learn more about this issue?
13. Do you have any suggestions or questions for me?

Thank you for participating in this interview. Please know that all of your responses will be kept strictly confidential. If there is any addition information that you would like to share, or if I can be of any assistance after this interview, please do not hesitate to contact me using the information provided on the card I provided. I would also be more than happy to provide you with a copy of my completed study or an abstract if you would like.

APPENDIX F

RUBRIC FOR ASSESSING COURSES FOR LEARNER-CENTEREDNESS

TABLE B.1

The Rubric for the Function of Content Dimension of Learner-Centered Teaching

The Function of Content				
Component	**Employs instructor centered approaches**	**Transitioning to learner-centered approaches**		**Employs learner centered approaches**
		Lower level of transitioning	**Higher level of transitioning**	
1. Varied uses of content in addition to building a base, instructor uses content to help students:	Instructor uses content that helps students building a knowledge base	In addition to building a knowledge base, instructor uses content to help students:	In addition to building a knowledge base, instructor uses content to help students:	In addition to building a knowledge base, instructor uses content to help students:
• Know why they need to learn content		Recognize why they need to learn the content	Identify why they need to learn content	Evaluate why they need to learn content
• Acquire discipline-specific learning methodologies (such as how to read primary source material)			Use discipline-specific learning methodologies with instructor's assistance	Acquire discipline specific learning methodologies
• Use of inquiry or ways of thinking in the discipline			Use inquiry of ways of thinking in the discipline with instructor's assistance	Practice using inquiry or ways of thinking in the discipline

• Learn to solve real-world problems	Instructor and content help students problems Or Instructor uses any one or none of the four subcriteria for uses on content	Apply content to solve problems with instructor's assistance Or Instructor uses any two of the four subcriteria for uses of content	Learn to apply content to solve real-world problems with instructor's assistance Or Instructor uses any three of four subcriteria for uses on content	Learn to solve real-world problems
2. Level to which students engage in content	Instructor allows students to memorize content	Instructor provides content so that students can learn material as it is given to them without transforming or reflecting on it	Instructor assists students to transform and reflect on some of the content to their own meaning out of some of it	Instructor encourages students to transform and reflect on most of the content to their own meaning out of it
3. Uses of organizing schemes	Students learn content without a clearly defined organizing scheme provided by instructor	Instructor provides limited organizing assistance	Instructor provides some organizing schemes to help students learn content	Instructor provides and uses organizing schemes to help student learn content
4. Use of content to facilitate future learning	Instructor provides content so students can learn it in isolation, without providing opportunities	Instructor provides students with limited opportunities to apply knowledge to new content	Instructor frames content so students can see how it can be applied in the future	Instructor frames and organizes content so students can learn additional content that is not taught

	for them to apply knowledge to new content			

TABLE B.2

The Rubric for the Role of the Instructor Dimension of Learner-Centered Teaching

The Role of the instructor				
Component	**Employs instructor centered approaches**	**Transitioning to learner-centered approaches**		**Employs learner centered approaches**
		Lower level of transitioning	**Higher level of transitioning**	
1. Creation of an environment for learning through (1) organization and (2) use of material that accommodate different learning styles	Instructor uses the same approach or approaches throughout the course even if the students are not learning	Instructor does not focus on creating a learning environment, but students do learn	Instructor creates a learning environment through use of one out of two subcriteria	Instructor creates a learning environment by using both subcriteria: through organizing and use of material that accommodates different learning styles
2. Alignment of the course components-objectives, teaching or learning methods, assignment methods – for consistency	Instructor does not align objectives, teaching or learning methods and assessment methods	Instructor minimally aligns objectives, teaching or learning methods, and assessment methods Or Aligns two out of the three course components	Instructor somewhat aligns objectives, teaching, or learning methods and assessment methods	Instructor explicitly, coherently, and consistently aligns objectives, teaching or learning methods and assessment methods
3. Teacher or learning	Instructor does not have	Instructor uses teaching	Instructor uses some teaching	Instructor intentionally

methods appropriate for student learning goals	specified learning goals Or Uses teaching and learning methods that conflict with learning goals`	and learning methods without regard for student learning goals And/or Does not use active-learning activities	methods that are appropriate for student learning goals	uses various teaching or learning methods that are appropriate for student learning goals
4. Activities involving student, instructor, content interactions	Instructor uses no activities in which students actively interact with material or instructor, or each other	Instructor uses a few activities in which students actively interact with material or instructor or each other	Instructor uses some activities in which student actively interact with material or instructor or each other Or There are some three-way interactions	Instructor routinely uses activities in which students actively interact with material and instructor and each other
5. Articulation of SMART objectives **S**pecific **M**easurable **A**ttainable **R**elevant **T**ime Oriented	Instructor articulates vague course objectives And/or Does not articulate objectives in syllabus	Instructor articulates in syllabus course objectives that do not have all five attributes of SMART objectives	Instructor articulates SMART objectives in syllabus but does not refer to them throughout the course	Instructor articulates SMART objectives in syllabus and regularly refers to them throughout the course
6. Motivation of students to learn (intrinsic drive to learn versus	Instructor extensively uses extrinsic motivators to become	Instructor provides limited opportunities for students to	Instructor provides some opportunities for students to become	Instructor inspires and encourages students to become

extrinsic reasons to earn grade)	intrinsically motivated to learn Uses extrinsic motivators to get students to earn grades	become intrinsically motivated to learn	intrinsically motivated to learn	intrinsically motivated to learn

TABLE B.3

The Rubric for the Responsibility for Learning Dimension of Learner-Centered Teaching

The Responsibility for Learning				
Component	**Employs instructor centered approaches**	**Transitioning to learner-centered approaches**		**Employs learner centered approaches**
		Lower level of transitioning	**Higher level of transitioning**	
1. Responsibility of learning	Instructor assumes *all* responsibility for student learning: Provides content to memorize Does not require students to create their own meaning Tells students exactly what will be on examinations	Instructor assumes *most* responsibility for student learning Provides detailed notes of content to be learned Reviews content to be examined while helping students learn the material and meet objectives	Instructor assumes *some* opportunities for students to assume responsibility for their own learning	Instructor provides *increasing* opportunities for students to assume responsibility for their own learning, leading to achievement of stated learning objectives
2. Learning to learn skills for the present and the future-including, for example:	Instructor allows students to meet course objectives without developing	Instructor directs students to develop a few skills for further learning	Instructor directs students to develop some skills for future learning	Instructor facilitates students to develop various and appropriate skills for

Time Management Self-monitoring Goal setting How to do independent reading How to conduct original research	further learning skills			further learning
3. Self-directed, lifelong learning skills- including, for example: Determining a personal need to know more Knowing who to ask or where to seek information Determining when need is met and Development of self-awareness of students' own learning abilities	Instructor does not consider: Self-directed learning skills relevant Or Self-awareness of students' learning abilities relevant	The instructor does not assist students to become self-directed, lifelong learners Or Aware of their own learning and abilities to learn	Instructor assists students to become self-directed, lifelong learners in a few areas And Somewhat aware of their won learning and abilities to learn	Instructor facilitates students to become proficient, self-directed, lifelong learners And Fully aware of their own learning and abilities to learn
4. Students' self-assessment of their learning	Instructor believes that instructors alone assess student learning Or Does not consider self-assessment of learning relevant	Instructor does not direct students to assess their own learning	Instructor sometimes provides direction to help students assess their own learning	Instructor motivates students to routinely and appropriately assess their own learning

5. Students' self-assessment of their strengths and weaknesses	Instructor believes that only instructors assess students' strengths and weaknesses	Instructor does not direct students to practice self-assessments	Instructor helps students practice some self-assessment skills	Instructor encourages students to become proficient at self-assessment
6. Information literacy skills: (a) framing questions, (b) accessing sources, (c) evaluating sources, (d) evaluating content, (e) using information legally (as defined by the Association of College and Research Libraries)	Instructor does not help students acquire any information literacy skills	Instructor helps students acquire two of the five information literacy skills	Instructor helps students acquire four of the five information literacy skills	Instructor facilitates students to become proficient in all five information literacy skills

TABLE B.4

The Rubric for the Purposes and Processes of Assessment Dimension of Learner-Centered Teaching

The Purposes and Processes of Assessment				
Component	**Employs instructor centered approaches**	**Transitioning to learner-centered approaches**		**Employs learner centered approaches**
		Lower level of transitioning	**Higher level of transitioning**	
1. Assessment within the learning process	Instructor sees assessment as less important than teaching And	Instructor *minimally* integrates assessment within the learning process	Instructor *somewhat* integrates assessment within the learning process	Instructor *mostly* integrates assessment within the learning process

	Does not integrate assessment within the learning process			
2. Formative assessment (giving feedback to foster improvement)	Instructor uses only summative assessment (to make decisions to assign grades) And Provides students with no constructive feedback	Instructor uses a little formative assessment And/or Provides students with limited constructive feedback	Instructor gives students some formative assessment And Constructive feedback following assessments	Consistently throughout the learning process, instructor integrates formative assessment And Constructive feedback
3. Peer and self-assessment	Instructor does not consider peer and self-assessments relevant And/or Factor these assessments into final grade	Instructor rarely requires students to use peer and self-assessments	Instructor requires students to sue some peer and self-assessments	Instructor routinely encourages students to use peer and self-assessments
4. Demonstration of mastery and ability to learn from mistakes	Instructor does not provide any opportunities for students to demonstrate that they have learned from mistakes and	Instructor provides a few opportunities for students to demonstrate that they have learned from mistakes	Instructor provides some opportunities for students to demonstrate mastery after making mistakes	Instructor offers students many opportunities to learn from their mistakes and then demonstrate mastery

	then show mastery			
5. Justification of the accuracy of answers	Instructor determines accuracy of answers And Does not allow students to ask why they got answers wrong	Instructor allows students to ask why they got answers wrong	Instructor allows students to justify their answers when they do not agree with those of instructor	Instructor encourages students to justify their answers when they do not agree with those of the instructor
6. Timeframe for feedback	Instructor does not provide a timeframe for feedback Or Not return tests or does not grade assignments	Instructor provides a timeframe for feedback, without seeking students' input And Usually follows the timeframe for providing feedback	Instructor provides a timeframe for feedback, with students' input And Usually follows the timeframe for providing feedback	Instructor and students mutually agree on a timeframe for feedback And Always follows the timeframe for providing feedback
7. Authentic assessment (what practitioners and professionals do)	Instructor rarely or never uses authentic assessments	Instructor uses a few assessments that have authentic elements	Instructor uses some authentic assessments or assessments that have authentic elements	Instructor uses authentic assessment throughout the course

TABLE B.5

The Rubric for Balance of Power Dimension of Learner-Centered Teaching

The Balance of Power			
Component	**Employs instructor**	**Transitioning to learner-centered approaches**	**Employs learner**

	centered approaches	Lower level of transitioning	Higher level of transitioning	centered approaches
1. Determination of course content	Instructor entirely determines course content And Does not seek feedback on the content	Instructor determines course content And Allows students to offer insights or feedback on content after course is over	Instructor determines course content And Allows students to choose some assignment topics (with permission)	Instructor largely determines course content And Encourages students to explore additional content independently and through projects
2. Expression of alternative perspectives	Instructor expresses all of the perspectives	Instructor infrequently allows students to express alternative perspectives, even when appropriate	Instructor allows students to express alternative perspectives when appropriate	Instructor encourages students to express alternative perspectives when appropriate
3. Determination of how students earn grades	All performance and assignments count toward students' grades	Instructor allows students to drop one assessment but provides no alternative opportunities for them to demonstrate mastery	Instructor allows students to resubmit assignments or other assessments for re-grading	Instructor uses either mastery (students may retake exam until reaching acceptable performance standard) or contract grading (students contract for their grade based upon how much acceptable work they do)

				to determine what grade students will earn
4. Use of open-ended questions	Even when appropriate, instructor does not use assignments that are open-ended or allow alternative paths And/or Test questions that allow for more than one right answer	When appropriate, instructor uses a few assignments that are open-ended or allow alternative paths And/or Test questions that allow for more than one right answer	When appropriate, instructor sometimes uses assignments that are open ended or allow alternative paths And/or Test questions that allow for more than one right answer	If appropriate, instructor routinely uses assignments that are open ended or allow alternative paths And/or Test questions that allow for more than one right answer
5. Flexibility of course policies, assessment methods, learning methods, and deadlines	Instructor mandates all policies and deadlines Or Instructor does not adhere to policies	Instructor is flexible on a few course policies, assessment methods, learning methods, deadlines And Infrequently adheres to these flexible decisions	Instructor is flexible on a few course policies, assessment methods, learning methods, deadlines And Somewhat adheres to what they agreed upon	Instructor is flexible on a few course policies, assessment methods, learning methods, deadlines And Always adheres to what instructor has agreed to with the students
6. Opportunities to learn	Instructor mandates that students attend all classes even	Instructor provides consequences for not	Instructor provides attendance options for some classes	Instructor helps students take advantage of

	when they are not expected to be active learners	attending classes And/or Not participating in active-learning experiences	so students may miss a few classes without penalty And/or Participation options for some activities	opportunities to learn And Fosters understanding of consequences of not taking advantage of such learning opportunities, like missing class

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APPENDIX G

CLASSROOM OBSERVATION

Class Name:_____ Date of Observation:_____

Professor Name:_____ Time:_____

Number of Students:_____

Classroom Diagram:

Observation	**Observer's comments**

Reference:

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