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UNIVERSITY OF OKLAHOMA

GRADUATE COLLEGE

CHANGE FROM AN INSTRUCTOR-CENTERED TO A LEARNER-CENTERED INSTRUCTIONAL STRATEGY: A STUDY OF FACULTY AT A COMMUNITY COLLEGE

A DISSERTATON

SUBMITTED TO THE GRADUATE FACULTY

in partial fulfillment of the requirements

for the degree of

DOCTOR OF PHILOSOPHY

By

CHARLOTTE LYNNE FRENCH

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CHANGE FROM AN INSTRUCTOR-CENTERED

TO A LEARNER CENTERED INSTRUCTIONAL STRATEGY:

A STUDY OF FACULTY AT A COMMUNITY COLLEGE

A DISSERTATION APPROVED FOR THE DEPARTMENT OF

EDUCATIONAL LEADERSHIP AND POLICY STUDIES

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ABSTRACT

Faculty can play a key role in higher education's efforts to improve student learning through the adoption of a learner-centered teaching style. This study's goal was to provide information regarding factors influencing faculty to initiate changes in their teaching style, more specifically, the factors that are likely to result in faculty changing their traditional instructor-centered teaching style to one focused on the learner.

Faculty self reported the extent of change from their teaching style five years ago to their current teaching style on scales that included learner-centered teaching at one end and instructor-centered teaching at the other end. They then indicated the extent of influence of each of the following variables on changing their teaching style: participation in faculty development programs; the influence of institutional reward structures, administrators, peers, students, and curriculum change; teaching with technology; and teaching distance education classes.

The variables found to be significant in influencing change in teaching style to learner-centered teaching were faculty development and the characteristics of students – specifically, on-campus faculty development programs, the number of underprepared students in classes, and students' own expectations of their learning. Background characteristics of faculty found to be significant with the significant variables were age, years of teaching at the college studied, and total years of teaching experience.

CHANGE FROM AN INSTRUCTOR-CENTERED TO A LEARNER-CENTERED INSTRUCTIONAL STRATEGY: A STUDY OF FACULTY AT A COMMUNITY COLLEGE

CHAPTER I

Introduction

Higher education is in the midst of a transformation that reflects the changes in society as it moves from an industrial to a knowledge age (Gardiner, 1994). The defining feature in higher education is a transition from an environment focused on teaching to one focused on student learning (Barr & Tagg, 1995). Accomplishing this new vision of education will require faculty to move from content- or instructor-centered teaching to learner-centered teaching (Kember & Gow, 1994; Stage, Muller, Kinzie, & Simmons, 1998). Learner-centered teaching is more likely to result in greater gains in intellectual development, critical thinking and problem solving skills, and interpersonal and intercultural skills (Gardiner, 1994; Stage et al., 1998). To become more learner-centered in their teaching, faculty must change the educational environment from one in which they transmit knowledge to passive learners to one in which they challenge their students to be actively engaged in learning. Following this argument, faculty should change their view of the purpose of teaching from "covering the content" to "helping students learn" (Svinicki, 1990, p. 7). However, faculty's acceptance of this change in teaching remains mixed, which can range from complete acceptance to non-acceptance (Bumphus, 1996).

Despite the potential that better student learning outcomes can be achieved from a different teaching style and methods, relatively few faculty members are engaging in change and innovation in teaching (Fischer & Fischer, January 1979; Palmer, 1994).

Most faculty resist changing their instructional style or methods (Guskey, April, 1985). However, a movement toward more learner-centered teaching is developing (Bonwell & Eison, 1991; Davis, 1993; Meyers & Jones, 1993; Gardiner, 1994; Grasha, 1996; Grubb with Worthen, Byrd, Webb, Badway, Case, Goto, & Villenueve, 1999; Weimer, 1990; Weimer & Associates, 1996). Despite the movement toward more learner-centered teaching, the motives and reasons behind the faculty's decision to change their teaching remain unclear.

Faculty can play a key role in higher education's efforts to improve student learning through the adoption of a different teaching style that is more likely to result in higher levels of learning. The way to persuade faculty to change their instructional strategy is a critical issue, but the current literature base provides little insight into this matter (Grasha, 1996; Grubb, 1999). This study's goal was to provide information regarding factors influencing faculty to initiate changes in their teaching style. More specifically, what were the factors that are likely to result in faculty changing their current instructor-focused teaching style to one focused on the learner?

Barriers to Change in Teaching

Changing to learner-centered teaching may be difficult to achieve even considering that many faculty may agree that it is beneficial. One of the primary barriers to accomplishing any change in teaching is the tendency to preserve academic tradition. In general, faculty have not been expected nor required to have training or preparation for teaching in higher education. Faculty teach content; so knowledge of the discipline to be taught has been the only recognized criteria for competence (Seldin, 1995; Weimer, 1990).

Faculty typically develop a teaching style modeled after the behavior of former teachers they have had in their educational experiences (Brookfield, 1995). As a result, most faculty often do not think critically about their teaching style and changes in style that could result in a better learning environment for students (Gardiner, 1994; Grasha, 1996; Travis, 1995; Weimer, 1990). In this situation, faculty hold uninformed but rigid beliefs about teaching and learning that are difficult to change (Weimer, 1990). Further, faculty and students share a consistent expectation of each other's traditional roles (Bonwell & Eison, 1991). When faculty do attempt changes in teaching style, they may encounter resistance from students.

The educational setting in which teaching occurs also inhibits change. Many institutions are experiencing declining financial resources resulting in larger class sizes, the hiring of more part-time teachers, and less funding for faculty development programs (Weimer, 1990). Faculty who are under pressure to teach more and larger classes are unlikely to consider change since it is a time-consuming effort. Additionally, even when institutions support change in teaching, they do not always reward faculty for attempting or accomplishing change (Bonwell & Eison, 1991; Grubb, 1999; Haas & Keeley, 1998; Seldin, 1995).

Likewise, faculty do not often respond to institutional or administrative encouragement for change and innovation. Since faculty generally believe they are already doing well, they do not see a need for change in their teaching styles or practices and therefore, do not perceive a need for additional training (Seldin, 1995; Weimer, 1990). Even those faculty who attempt change find the task uncomfortable and difficult, resulting in increased anxiety and fear among them (Bonwell & Eison, 1991). Many

faculty are not willing to risk failure nor having students fail to respond to their intended change (Haas & Keeley, 1998; Nickerson, Perkins, & Smith, 1985).

Theories of Change in Teaching

Higher education literature provides little information related to change in teaching and what exists is generally found in the literature on teaching improvement. Researchers and experts who address the issue of change in teaching generally agree that the propensity for change is a result of reflecting on one's educational philosophy, teaching style, and teaching methods (Bonwell & Eison, 1991; Conti, 1989; Cranton, 1998; Grasha, 1996; Heimlich & Norland, 1994; Paulsen & Feldman, 1995; Prawat, 1992; Travis, 1995; Weimer & Associates, 1996). Reflection involves critically thinking about and analyzing one's teaching (Grasha, 1996).

Schon (1983, 1987) proposed that professional practitioners, such as faculty, change their practice as a result of reflection. He described two types of reflection: "reflection in action" and "reflection on action." Reflection in action refers to a process of reacting immediately to inconsistencies in a situation by rethinking the situation, reframing it, and experimenting with possible solutions. Reflection on action refers to thinking about and analyzing a recently experienced issue, problem or difficulty. Schon (1983) postulates that change follows reflection and that an unexpected outcome, surprise, or dissatisfaction in the performance of the job initiates reflection.

Most theories of change in teaching generally follow a change process that parallels Schon's theory of reflective practice. To begin with, reflection and change occur as a result of uncertainty, doubt, an unexpected outcome, a surprise, discomfort or dissatisfaction with the results of teaching (Bonwell & Eison, 1991; Cranton, 1998;

Grasha, 1996; Heimlich & Norland, 1994; Kember & Gow, 1994; Paulsen & Feldman, 1994; Prawat, 1992; Reinsmith, 1992; Travis, 1995; Weimer, 1990). During a period of reflection, faculty may think critically about what they are doing and the results they are experiencing. They may also think about the outcomes they desire and begin to explore mentally the options for achieving those outcomes (Grasha, 1996; Heimlich & Norland, 1994). Subsequently, they may experiment with various alternatives in teaching (Heimlich & Norland, 1994; Katz & Henry, 1988; Paulsen & Feldman, 1994; Prawat, 1992; Reinsmith, 1992; Weimer, 1990). While experimenting with alternatives, faculty may develop a new vision of teaching and take steps to implement this vision (Paulsen & Feldman, 1994; Reinsmith, 1992; Weimer, 1990). From beginning to end, the change process may occur over a long period, perhaps over many years (Heimlich & Norland, 1994; Katz & Henry, 1988; Miller, 1998; Paulsen and Feldman, 1995). Although there is agreement among these theories that reflection and change in teaching begins with faculty experiencing some type of discomfort, disconfirmation, uncertainty or anxiety in the instructional environment, there is little detail or specificity about the various factors that initiate reflection and then change.

Factors That May Initiate the Change Process

Grasha (1996) provides some insights into the factors that may initiate change in teaching by first explaining that environmental factors provide the context in which change begins. Grasha's use of the term "environment," in this case, is best defined by Weimer (1990) as "the collection of social and cultural conditions in which one lives and works and that influences, in some cases determines, the quality of life" (p. 130). Others support Grasha's view that environmental factors are involved in influencing faculty to

initiate change in teaching (Beder & Darkenwald, 1982; Cranton, 1998; Grubb, 1999; Heimlich & Norland, 1994; Paulsen & Feldman, 1995; Weimer, 1990). The environmental factors may provide the circumstance in which faculty experience the discomfort, disconfirmation or anxiety that results in reflection and change in teaching. Examining these factors then may provide information on the factors that may influence faculty to initiate change in teaching style.

The following may provide the context in which reflection and change in teaching style begins – the characteristics of students, including those who are underprepared, have high expectations of education, and have varying learning styles; student evaluations of instruction; rewards for teaching; faculty development programs; and the influence of peers and administrators (Grasha, 1996; Grubb, 1999; Paulsen & Feldman, 1995; Weimer, 1990). There is support in the higher education literature for the influence of these factors in initiating change in teaching. To begin with, one of the most significant influences may be characteristics of college students themselves. An increase in the number of underprepared students and differing expectations of educational outcomes on the part of students have caused some faculty to rethink their roles (Katz & Henry, 1988; Meyers & Jones, 1993; Pitts, White & Harrison, 1999; Weimer, 1990; Weimer, 1996). Underprepared students are those who come to college with inadequate academic preparation, poorly developed study skills and habits, and may not be socially or culturally prepared for the college environment (Gardiner, 1994). Underprepared students differ significantly in some demographic characteristics and rate themselves differently on many experiential and attitudinal measures than college ready students (Grimes & David, 1999). Higher education institutions often provide services and

programs that ensure these students have a better chance to succeed in college. Faculty find they must be more flexible, more adaptable, and more innovative in teaching to meet the needs of underprepared students and more sensitive to expectations of students who view college primarily as a way to gain a better job, more pay, and a better life rather than a way to simply gain an education (Karabell, 1998; Pitts, White & Harrison, 1999). Additionally, student learning styles and student evaluations of instruction may lead faculty to reflect and make changes in teaching styles (Grasha, 1996: Grubb, 1999).

To accomplish any true and lasting change in teaching, institutions must provide substantial incentives and tangible rewards to faculty for change and innovation in teaching (Haas & Keeley, 1998; Travis, 1996). By failing to provide clear and visible rewards for change and innovation in teaching, higher education may implicitly endorse the status quo (Bonwell & Eison, 1991). In addition, participation in campus faculty development programs, attendance at professional conferences or workshops and involvment in campus teaching and learning centers can be effective in changing teaching. Through these experiences, faculty are introduced to different teaching models and to learner-centered instruction (Eble & McKeachie, 1985; Haas & Keeley, 1998; Jakoubeck, 1994; Paulsen & Feldman, 1995; Weimer, 1990).

Peers and administrators may play a major role in the change to a learner-centered instructional mode. Faculty may be influenced to consider change when they see their peers working to improve their teaching, learn from them about the effectiveness of changes in teaching, or simply discuss with peers about issues related to teaching and learning (Meyers & Jones, 1993; Paulsen & Feldman, 1995; Weimer, 1990). Although administrators and institutional leaders can play an important role in inducing teaching

improvement and change, they are most effective in a passive role supporting and facilitating the faculty's desire to change (Haas & Keeley, 1998; Katz & Henry, 1988; Travis, 1995).

The literature suggests additional factors that may also influence a change in teaching. Institutional or departmental curriculum change or disciplinary curriculum reform or change on a broad scale may initiate reflection and change in teaching (Grasha, 1996). Faculty involved in teaching a distance education class or teaching with technology may find that their teaching experience has not prepared them for the demands of either situation. As a result, they may experience the discomfort or anxiety that initiates reflection and change in teaching. These experiences can transform teaching and learning because faculty often have to rethink instructional objectives, strategies, and methods and then change practices and attitudes accordingly (Beaudoin, 1990; Dillon, 1989; Dillon & Walsh, 1992; Filipczak, 1996; Green & Gilbert, 1995; Grubb et al., 1999; Gunawardena, 1992; O'Banion, 1997; Strain, 1987).

Summary

Reflection on teaching is an important part of the process of change in teaching, but it is environmental and other factors that may trigger reflection and change in teaching. If the factors that initiate change to learner-centered teaching can be identified and manipulated, there may be numerous possibilities for growth and change in teaching (Grasha, 1996). Therefore, this study focused on factors related to change to learner-centered teaching, an important first step in studying the *process* of change to learner-centered teaching.

Statement of the Problem

Most faculty in higher education practice an instructor-centered teaching style even though a learner-centered style is more likely to result in greater gains in intellectual development, critical thinking and problem solving skills, and interpersonal and intercultural skills (Gardiner, 1994; Stage et al., 1998). Since it is not well understood why some faculty change to more learner-centered teaching and others do not, it is important to identify factors that may influence faculty to initiate that change. Various environmental and other factors provide the context in which faculty initiate a change in teaching styles (Grasha, 1996; Paulsen & Feldman, 1995; Weimer, 1990). Therefore, factors influencing change to learner-centered teaching were the foci of this study. The factors selected for the study were: participation in faculty development programs; the influence of institutional reward structures, administrators, peers, students, and curriculum change; teaching with technology; and teaching distance education classes.

Purpose of the Study

The purpose of this study was to examine the factors related to change in teaching style among the faculty in a community college. More specifically, the study examined factors related to change from an instructor-centered focus to a learner-centered focus in teaching.

Research Questions

The following questions guided this study:

1. What were the background characteristics of the faculty surveyed? The characteristics addressed were age, gender, highest degree held, teaching field and

years of teaching experience. The data were intended to provide descriptive statistics for the study.

2. What, if any, changes were made from instructor-centered to learner-centered teaching in the past five years by the faculty surveyed?
3. How was participation in faculty development programs or activities related to the extent of change from instructor-centered to learner-centered teaching? The components addressed were participation in campus faculty development programs, involvement in campus centers for teaching and learning, and attendance at professional meetings and conferences.
4. How were institutional rewards and incentives related to the extent of change from instructor-centered to learner-centered teaching? The components addressed were financial rewards for teaching excellence or innovation, institutional recognition for teaching excellence or innovation, and faculty grants to develop teaching excellence or innovation.
5. How was administrative support and encouragement for change and innovation in teaching related to the extent of change from instructor-centered to learner-centered teaching? The component addressed was administrative support and encouragement for change and innovation in teaching and administrators include deans, directors, vice-presidents, and the president of the institution.
6. How was faculty peer influence related to the extent of change from instructor-centered to learner-centered teaching? The components addressed were the influence of peers in a faculty member's department, faculty roundtable discussions, and informal discussion with peers outside the department.

7. How were students related to the extent of change from instructor-centered to learner-centered teaching? The components addressed were the number of underprepared students, student learning outcome expectations, student learning style preferences, and student evaluation of instruction.
8. How was curriculum change related to the extent of change from instructor-centered to learner-centered teaching? The components addressed were institutional curricular change, departmental curricular change, and disciplinary curricular change.
9. How was using technology in the classroom related to the extent of change from instructor-centered to learner-centered teaching? The component addressed was the use of technology in the classroom. Technology included computers, videoplayers, laser disk players, videoprojectors, Internet access, student computers and various other hardware and software.
10. How was teaching distance education courses related to the extent of change from instructor-centered to learner-centered teaching? The components addressed were teaching live instructional television classes, teaching telecourses, or teaching online classes.
11. What was the interaction of the elements in research questions 3 through 10 with regard to influencing faculty to change from instructor-centered to learner-centered teaching?

Definitions

Instructor-centered teaching – In the instructor-centered approach, the teacher is the center of the classroom environment (Conti, 1989). The teacher's goal is to transfer course content to students and ensure they have the facts and skills they need (Guskin,

1994). Therefore, the primary concern of the teacher is the message (Prawat, 1992). Additionally, a priority of teachers is to stay current in their discipline and to ensure that the traditions of the discipline are maintained.

Students are generally passive and their learning is dependent on the actions of the teacher in the classroom (Weimer & Associates, 1996). The teacher manages the learning environment and develops learning objectives, learning activities, and evaluation methods. The primary methods of instruction are lecture, discussion, and demonstrations (Bonwell & Eison, 1991; Gardiner, 1994; Guskin, 1994; Prawat, 1992). Evaluation usually includes some type of norm referenced or criterion referenced test. Tests emphasize recall of memorized or factual information (Weimer & Associates, 1996). Instructor-centered teachers generally over-emphasize and over-value grades (Eison, Janzow, & Pollio, 1993). Faculty who practice instructor-centered teaching are more likely to believe the quantity and quality of resources available and the quality of entering students determine a successful course (Fox, 1997).

Learner-centered teaching – In learner-centered teaching, the center of the classroom moves away from the teacher and toward the students. Rather than being concerned with the message, the teacher is concerned with the extent to which the students are making sense of the message (Prawat, 1992). The teacher's role is to facilitate understanding rather than memorization of facts and to facilitate the development of higher order intellectual and cognitive skills (Gardiner, 1994; Stage et al., 1998; Weimer & Associates, 1996). The teacher's goal is to improve the quality of learning for the students as individuals and as a group (Hughes, 1992).

Learner-centered teachers are primarily concerned with how students learn (Gardiner, 1994; Stage et al., 1998). More importance is given to learner-generated solutions and problems than to the students' memorizing facts and procedures to derive correct answers (Stage et al., 1998). Learning opportunities extend beyond the classroom, and various technologies can be used to enhance learning (Stage et al., 1998; Weimer & Associates, 1996). Instructional methods used include collaborative and cooperative learning, problem solving and problem-based learning, simulations, case studies, role playing, peer teaching, service learning, and experiential learning (Bonwell & Eison, 1991; Gardiner, 1994; Guskin, 1994; Meyers & Jones, 1993; Stage et al., 1998; Travis, 1995). Collaborative learning is a joint intellectual effort by students or students and teachers that relies heavily on the input, direction, and shaping of content by students (Hanna, 2000; Stage et al., 1998). Cooperative learning consists of students working together in groups to achieve joint learning, with greater organization and direction of content by the teacher than in collaborative learning (Hanna, 2000). Problem-based learning is a form of cooperative learning that organizes learning around a structured problem created by the teacher (Hanna, 2000). Service learning integrates community and public service with structured and intentional learning (Stage et al., 1998). The goal of learner-centered teaching is to focus less on the lecture and more on using varying instructional methods appropriate to the learning objectives and the students' abilities and skills (Stage et al., 1998; Travis, 1995; Weimer & Associates, 1996).

Teachers use innovative methods for evaluation and assessment of learning including written formats, presentations, and interpretation of music, drama, and art (Stage et al., 1998; Weimer & Associates, 1996). Teachers emphasize learning and do

not over-emphasize grades (Eison, Janzow, and Pollio, 1993). Faculty are more likely to believe that the success of the course is determined by the quality of the learning taking place in the classroom, the degree to which students are engaged in the learning process, and by the quality of students completing the course (Fox, 1997; Stage et al., 1998).

Significance of the Study

Educators have implemented reform in every area of higher education in the last few decades in response to issues of accountability, efficiency, productivity, and quality (O'Banion, 1997). Yet, the calls for change continue with greater intensity (Plater, 1995). There are questions about the success and effectiveness of previous reform efforts in light of the fact that they have not had a significant impact on the basic way in which students are educated. "Retrenchment, reorganization, restructuring, and reallocation may not be sufficient preparation for an era that calls for transformation" (HEIRAlliance, 1996, p. 2). Many also believe that reform efforts focused on improving the quality of teaching have failed to improve education because they did not consider the real issue – student learning (Angelo, 1994; Cross, 1990). Recent reform efforts in higher education attempt to rectify this situation by placing improved student learning as the goal. For these reform efforts to be successful, faculty must change from instructor-centered teaching to learner-centered teaching (Barr & Tagg, 1995).

Student gains in intellectual development, critical thinking and problem solving skills, and interpersonal and intercultural skills can be improved by implementing more learner-centered teaching, but most faculty find change difficult, especially in their teaching. "Change is a slow, difficult, and gradual process for teachers" (Guskey, April 1985, p. 59). Identifying factors that influence faculty to initiate change to learner-

centered teaching and supporting faculty through the change process must be a priority for those who support improved student learning.

Unless educators begin to understand faculty and the process of change to learner-centered teaching and then take steps to design methods to support and facilitate these changes, the new reform efforts are destined to fail just like other reform efforts in the past. Educators will continue to face serious and increasing criticism while students may seek what they need through for-profit educational institutions. Many institutions may not survive as for-profit institutions step in to accomplish what higher education could not accomplish (Dolence & Norris, 1995). The same is true for businesses with education and training needs. Businesses already provide a large part of their own training and education needs and they may increasingly do so if higher education cannot provide employees with the knowledge and skills they need.

There has been an appreciable increase in knowledge about learning in the last decades of the 20th century, but faculty generally do not apply that knowledge in their teaching (Lazerson, Wagener, & Shumanis, 2000; Stage et al., 1998; Wingspread, 1993). Gardiner (1994) observes, "Today, newer, empirically based methods of instruction await widespread use in higher education" (p. 114). Changing to a learner-centered teaching mode can lead faculty to examine existing and new theories about learning and begin to apply them in their teaching practices (Travis, 1996).

The teaching/learning process is at the center of the mission of higher education institutions and should be a primary focus of research in this time of major change in education and in the world. However, research on college teaching is an underdeveloped field of research, with most research being many years old and anecdotal or descriptive in

nature rather than a multivariate examination (Bonwell and Eison, 1991; Fairweather, 1996). This is particularly so in regards to empirical investigations of teaching in the community college (Grubb et al., 1999). More current research is needed to provide a foundation for future practice.

Information generated by the study can be used in a practical manner by institutions seeking to influence and support faculty change to learner-centered teaching. If the factors that influence faculty to initiate change to learner-centered teaching can be identified, institutions can provide timely and effective support systems and incentives for faculty to move through the process of change.

Limitations of the Study

A community college was the setting for this study. Most community college faculty spend a greater amount of their professional time teaching than their counterparts at other types of institutions. Therefore it was an ideal setting for studying factors related to change in teaching. At the same time, it is recognized that the results of the study may be generalized to the community college setting only.

The variables selected for study may not have included all the factors that initiate change in teaching. Variables included were those suggested by literature in higher education and the experience of the researcher.

Data collection was accomplished through the use of a survey. Respondents were asked to indicate their teaching style on a scale with instructor-centered teaching described at one end of the continuum and learner-centered teaching described at the other end. It was assumed that respondents accurately reflected their teaching style or respond to questions related to their teaching style.

Summary

Learner-centered teaching can result in greater gains in students' intellectual development, critical thinking and problem solving skills, and interpersonal and intercultural skills, but most faculty continue to use an instructor-centered approach to teaching (Gardiner, 1994; Grasha, 1996; Stage et al., 1998). Little is known about what may influence faculty to initiate change to learner-centered teaching. Understanding the total process of change in teaching is important, but a key to understanding change is to identify the factors that influence faculty to begin the process of changing their teaching styles (Grasha, 1996). This research was intended to add information to the knowledge base regarding factors that may influence faculty to initiate change to learner-centered teaching.

The study was organized into five chapters. The first chapter presented the problem, the background of the problem, the research questions, significance of the study, definitions, and limitations. Chapter Two provided the pressures for change in higher education and their impact on teaching and learning, theories of teaching style, links between student learning and teaching styles, theories of change in teaching style, and the rationale for the selection of variables for the study. Chapter Three described the methods used to conduct the study. Chapter Four presented the findings and Chapter Five provided a discussion of the findings.

CHAPTER II

Theoretical Framework and Relevant Literature

Introduction

Higher education is undergoing a transformation as a new millennium begins. Institutions are searching for ways to address the demands for change that come from the public, government, students, and educational leaders. The need to improve student learning and questions about faculty roles and practices contribute to current and future challenges educators must confront. This chapter discusses the pressures for change in higher education and their impact on teaching and learning, theories of teaching style, links between student learning and teaching styles, and theories of change in teaching style. Literature and research that supported the variables selected for study is provided.

Demands for Change in Higher Education

Among the challenges faced by higher education are greater student diversity, rapid technological advances, new communication patterns, stable or decreased public funding and increased accountability (Cranton, 1998; Zeiss, 1998). Demands for change come from a number of sources, including the public, state and federal government, business and industry, leaders in education, and students themselves (Altbach, Kelley, & Weiss, 1985; Dolence & Norris, 1995; Kerr, 1994; O'Banion, 1997; Stark & Lattuca, 1997). These demands impact the total environment of higher education but have distinct impacts on the teaching and learning environment.

Stable or declining resources are forcing higher education institutions to seek greater efficiency and productivity. Some believe enhancing productivity is the most critical issue in higher education (Dolence & Norris, 1995). Since salaries for faculty

comprise a majority of the budgets of most institutions, the need for greater faculty productivity is often mentioned. To enhance productivity in the current educational model would require a large increase in the number of faculty, which is unlikely given the current funding situation (Heterick, 1993; Johnstone, 1993). According to Twigg (1994), the lecture or instructor-centered model is not capable of meeting the learning needs of the new century at a reasonable cost. Therefore, a new model must be developed.

The public is not quite satisfied with what colleges and universities are doing, and national and state officials are requiring greater accountability in higher education (Kennedy, 1995). Accountability issues force higher education institutions to focus more on outcomes than inputs and processes. As a result, in the past decade national, state, and professional accreditation agencies developed and implemented new evaluation criteria. The criteria include a more thorough review of student outcomes in higher education, requiring institutions to document the outcomes of student learning (Miller, 1999; O'Banion, 1997). These external pressures to be more accountable for student learning increase the pressure on faculty to improve student learning.

Higher education must also meet the needs of a more diverse student body that includes greater numbers of older students, underprepared students, and minority students. Today's students are more likely to be part-time and hold jobs, requiring more flexibility on the part of colleges in scheduling and delivering instruction and requiring services to help them succeed in college. Today's students have different goals and different styles of learning (Johnson & Lobello, 1996; Travis, 1995; Weimer & Associates, 1996). They do not respond as well as students in the past to traditional

higher education models for teaching and learning (Duderstadt, 1997-98; Weimer, 1990). To accommodate these new students, faculty must be more innovative and flexible in their approach to teaching.

The marketplace is changing quickly for higher education. The success of relatively new institutions like the University of Phoenix and the Western Governor's University, along with corporate training and education programs, has caused higher education to recognize them as significant competitors. The private sector is now viewing higher education as a more attractive business opportunity (Marchese, 1998). Additionally, new and changing workplace skills and training are not yet being addressed by higher education (Davis, 1995; Dolence & Norris, 1995). As a result, corporate education and training programs are growing. If higher education is to survive and prosper in the educational marketplace of the future, it must change to meet the learning needs of students and the expectations of those who employ them (Boggs, 1998; Dolence & Norris, 1995; Pelton, 1996; Zemsky & Massey, 1995).

Higher education faces the challenge of educating students for what is being called the "Knowledge Age," characterized by an increased rate of knowledge generation and a need for all people to learn more, learn faster, and learn continuously throughout their lives. Knowledge is growing so quickly that faculty are challenged to keep up with discipline knowledge and, at the same time, educate students with the skills needed to be successful in the workplace and to be life long learners (Davis, 1993). Faculty find themselves responsible not only for content in their disciplines but, at the same time, responsible for insuring students gain necessary learning skills.

Technology increasingly impacts the teaching and learning environment. Technology provides the means to significantly improve student learning in the classroom and also provides the means to expand access to education through distance education delivery of instruction. Although many faculty initially use technology to enhance traditional teaching styles, it may eventually lead to changes in the way they approach teaching and students. Faculty often find that the issues of technology cannot be separated from the issues of pedagogy and as a result, "conversations that begin in the realm of technology generally end up in the arena of pedagogy and curriculum design" (NCHEMS News, 1996, p. 2).

A New Emphasis on Student Learning

The public, government, and business expressed increasing discontent with higher education over the last decades of the 20th century. Beginning in the 1980's, over 100 national reports and 300 state reports criticized the failure of higher education in preparing students with the necessary knowledge, skills, and abilities (O'Banion, 1997; Paulsen & Feldman, 1995). Traditional educational practices, especially teaching pedagogies that rely primarily on the lecture, are under attack with what many view as good reason (Love & Love, 1995; Prawat, 1992). Gardiner (1994), in his review on research related to student learning observes, "The pattern of checkered quality and institutional ineffectiveness suggested by the studies reviewed in this monograph is fully consistent with serious concerns repeatedly raised in the long series of reports issued over the last decade by various government agencies and education organizations" (p. 106). In addition to external sources, pressures for improvement in student learning come from disciplines, faculty, higher education leaders and administrators, students, and families

(Paulsen & Feldman, 1995). The criticisms have been consistent on the constraints placed on learning reflected in the traditional model of education (Drucker, 1992; Grubb, 1999). Many believe the traditional instructor-centered methods cannot meet the learning needs of students who will face overwhelming social and economic problems in the 21st century because they do not provide critical thinking, problem solving and interpersonal and intercultural skills that will be needed.

From the 1980's to the 1990's, educators focused on improving teaching to reform education (Stage et al., 1998). Many have now concluded that a focus only on instruction is one sided and have proposed a shift in focus to student learning (Barr & Tagg, 1995; Guskin, 1994; O'Banion, 1997). There is widespread and growing interest in improving student learning at the institutional and national levels (Grubb, 1999; Millar, 1996). Higher education leaders are emphasizing the need to improve the learning experiences of undergraduate students. Professional associations emphasize learning improvement in national conferences and publications creating a nationwide dialogue on the issues (Meyers & Jones, 1993). Federal and private foundations increasingly allocate funds to support educational innovations that lead to improved student learning. Publishers of higher education literature are finding increased interest in materials that focus on teaching and improved student learning. Additionally, there is a growing body of research on learning that challenges traditional teaching styles and practices (Meyers & Jones, 1993; Stage et al., 1998). The result is that more and more educators are seeing the need to change the emphasis from faculty productivity, faculty disciplinary interests and faculty teaching styles to student productivity, what students need to learn and to student learning styles (Guskin, 1994).

The way in which institutions and faculty respond to becoming more learner-centered is not yet clear. The shift to an emphasis on student learning is a shift in the professional orientation for faculty and will require substantial change in teaching (Stage et al., 1998). Even Terry O'Banion, the well known leader of learning reform in community colleges, is unsure of the future of the change to a learner-focused environment, "It's still too early to tell whether it will take hold. It will depend on leadership from the people in the trenches. It will depend on how faculty respond to it" (Garcia, 1998, p. 8). While many faculty would like to continue with the traditional teaching methods, there is increasing pressure on faculty to change to a new learning environment (Weimer & Associates, 1996).

Teaching Styles

Educational theorists describe teaching styles in various ways and while there is no clear agreement, most descriptions include a mixture of identifiable qualities such as modes of classroom behavior, teaching methods employed, and personality traits (Grahsa, 1996). Even without clear agreement, a review of the similarities and differences among the theories is helpful. Some theorists view teaching style as internal in nature using terms such as needs and beliefs while others view it as external in nature and refer to teaching behaviors. Still others view it as both internal and external (Parisot, 1995). Grahsa (1996) defines style as a pattern of needs, beliefs, and behaviors. Conti (1985) provides perhaps the best overall definition of teaching style calling it a hypothetical construct that is associated with various identifiable sets of teacher behaviors that constitute a "pervasive quality that persists even though the content that is

being taught may change" (p. 7). Many researchers have noted the "pervasive quality" or consistency in teaching style (Grubb et al., 1999).

One common approach in classifying teaching style is that of a continuum that moves from instructor-centered at one end to learner-centered at the other end (Cranton, 1998; Grasha, 1996; Heimlich & Norland, 1994). These two approaches, instructor-centered and learner-centered, have been conceptualized by many although the terms used to describe them varies.

Instructor-centered teaching, the most common teaching style in higher education, has also been called behaviorist, passive, didactic, content-centered, conventional wisdom, traditional, mimetic, factory or industrial model, and skills and drills (Grubb et al., 1999; Karabell, 1998). Instructor-centered teaching relies on extrinsic motivation provided by the reward and punishment of grades, teacher approval or disapproval, and other consequences such as future employment. Faculty using this approach focus on part to whole instruction stressing the mastery of simple skills and content, and, eventually, more complex skills and content. Faculty serve as the primary source of authority and knowledge with the lecture serving as the most common method of delivering instruction. Students are generally passive learners, and many are often more interested in grades than learning.

Learner-centered teaching, the less common teaching style in higher education, has also been called meaning-making, progressive, constructivist, student-centered, andragogy, holistic, and focused on process as opposed to content (Grubb et al., 1999; Karabell, 1998). It has also been referred to as active learning since students must participate in creating knowledge rather than being passive recipients of content. The

teacher serves as a guide to students rather than the source of all authority and knowledge.

Teaching style is often described in terms of learner-centered versus instructor-centered teaching. Robinson (1979) placed teaching style within one of five categories on a continuum from content-centered to people-centered. Lenz (1982) described teaching style as proactive or reactive. She contends these two styles are based on the psychological aspects of learner-centered teaching and instructor-centered teaching. Jarvis (1985) proposed three different styles from teacher-controlled to facilitative or more learner-centered. Discussions of the differences between instructor-centered and student-centered teaching are also found in the writings of Knowles (1980) and Conti (1989). Heimlich and Norland (1994) present scales that categorize faculty as facilitators, enablers, experts, or providers and indicate whether faculty focus more on content, environment, teacher, group or student. Cranton (1998) classifies approaches from instructor-centered to learner-centered teaching using terms such as subject-oriented (expert), consumer-oriented (facilitator), and reformist (provocateur).

Reinsmith (1992) provides a continuum from instructor-centered to learner-centered teaching. Reinsmith's model provides a sequence of nine teaching forms, based on the patterns of interaction between students and teachers, through which teachers may progress or change from instructor-centered to learner-centered. To Reinsmith (1992), the center of the teaching act is the relationship between the teacher and the student. Grasha (1996) also provides a model of five teaching styles that is based on the interaction between teachers and students and reflects a continuum from instructor-centered to learner-centered teaching styles.

Teachers on any given day may vary their style from instructor-centered to learner-centered, but generally a predominant style emerges (Cranton, 1998; Grasha, 1996; Reinsmith, 1992). After studying faculty in community colleges, Grubb et al. (1999) believes there is remarkable consistency in the preference for a particular teaching approach.

Faculty at the instructor-centered end of the continuum are generally described as systematic, directive, and subject-centered with well thought out procedures and principles (Cranton, 1998). They strive to be knowledgeable and to remain current in their fields. They have a strong presence and are less interested in a two-way communication and exchange of ideas with their students (Conti, 1989; Reinsmith, 1992). The goal is to be well prepared for class, to present clearly course content to students and to make sure they have learned the facts and skills they need (Guskin, 1994). The teacher is primarily concerned with the message, the traditions of the discipline and insuring these traditions are maintained (Prawat, 1992). The teacher is the manager of the learning environment and primarily uses lecture, discussion, and demonstrations as methods of instruction (Bonwell & Eison, 1991; Gardiner, 1994; Grubb et al., 1999; Guskin, 1994; Prawat, 1992). Most instructor-centered teaching is based on accomplishing the student outcomes of knowledge and recall of facts (Cashin & Downey, 1995; Gardiner, 1994).

Faculty at the learner-centered end of the continuum are generally described as more interested in developing good rapport with learners and establishing a collaborative learning environment focused on students becoming autonomous learners (Grubb et al., 1999). The center of the classroom moves away from the teacher and toward the

students. Faculty are more interested in two-way communication and the exchange of ideas with their students (Reinsmith, 1992). In the learner-centered teaching environment, learning becomes primary with the actual content of the course becoming secondary (Cranton, 1998). The teacher is more concerned with the development of higher order intellectual and cognitive skills among students (Gardiner, 1994; Stage et al., 1998; Weimer & Associates, 1996). Faculty exhibit greater concern for how students learn rather than what they learn and are more interested in challenging students and accomplishing change in students (Cranton, 1998).

Learner-centered teachers rely less on just lecture and discussion; they tend to choose a variety of instructional methods that are appropriate to instructional objectives and student skills and abilities (Stage et al., 1998; Travis, 1995; Weimer & Associates, 1996). They generally focus on active learning and are more likely to use collaborative, cooperative and experiential learning methods, such as simulations, case studies, role playing, peer teaching, and service learning (Bonwell & Eison, 1991; Gardiner, 1994; Meyers & Jones, 1993; Stage et al, 1998; Travis, 1995). Typically they focus more on empowering learners and making them more autonomous and self-directed learners (Cranton, 1998).

There is little empirical evidence connecting desired student learning outcomes with specific teaching styles (Grubb et al., 1999; Guskin, 1994; Stage et al., 1998). Grubb et al. (1999) reports that the lack of evidence linking student learning outcomes with certain teaching styles is understandable. The use of a variety of theories of teaching style and various methods of measuring student learning outcomes make the results of studies inconsistent and difficult to compare. The absence of studies linking

teaching style to learning outcomes in higher education may also be due to the difficulty in carrying out such research. Faculty do not always welcome researchers into the classroom. The studies that exist linking teaching styles to learning outcomes generally support the superiority of learner-centered teaching (Grubb et al., 1999; Guskin, 1994; Stage et al., 1998).

Instructor-centered Teaching and Student Learning:

Almost all faculty agree that the development of the students' higher order cognitive abilities is their primary responsibility. Faculty report that they value creative problem solving, logical and objective thinking, openness to new ideas, capacity to deal with complex and ambiguous situations, and appreciation of intellectual and cultural diversity in their students (Gardiner, 1994; Stark, Lowther, Bentley, Ryan, Martens, & Genthon, 1990). Despite the goals and values of faculty, most continue with teaching styles that do not accomplish high levels of student learning (Grubb, 1999; Twigg, 1994). The vast majority of faculty practice instructor-centered teaching, primarily using the lecture as the method of instruction in all types of classes (Bonwell & Eison, 1991; Gardiner, 1994; Grubb, 1999; Terenzini & Pascarella, 1994).

Faculty often enter the teaching profession believing that lecturing is teaching (Reinsmith, 1992). In a study by Stark et al. (1988), faculty rarely mentioned any instructional strategies other than the lecture. For most students in lecture classes, their academic activities typically involve listening passively in class, doing little learning on their own, and rarely working with faculty or other students outside of class. They infrequently engage in reflection about their own learning and development (Gardiner, 1994). Perelman (1992) provides an outline of the problems with traditional teaching

based on the lecture including: it reduces the chances for discovery, exploration or invention; it creates a dependency on faculty that undermines the development of the higher order skills of creativity and problem solving; it reduces students' motivation to learn; and, it encourages the veneer rather than the reality of learning.

The limitations of the lecture for accomplishing student learning have been noted in a large body of evidence gathered over many years (Gardiner, 1994). In reviewing a number of studies related to students' active involvement with thinking, Gardiner (1994) found that lecture, discussion, and testing in the majority of college classrooms primarily centered on the student learning outcomes of knowledge and recall. Other researchers that have studied the use of lectures also believe that they are effective primarily for learning low-level factual material (McKeachie, 1986). Gardiner (1994) determined that students generally are not involved in thinking in higher education settings. In fact, as a result of reviewing a number of studies on this subject, he concluded that students, other than those students who have above average education and intelligence, recall a very little amount of a lecture. Despite the research and the recommendations to decrease reliance on lecture as the primary method of instruction, faculty continue to use it (Gardiner, 1994; Haas & Keeley, 1998; Stage et al., 1998; Terenzini & Pascarella, 1994).

Since about half of all students withdraw from college before graduation, faculty who practice instructor-centered teaching generally believe that when learning does not occur, it is because the students lack the ability to learn (Stage et al., 1998). Many faculty continue to believe it is pre-collegiate characteristics that are related to whether students learn or not and they generally do not associate teaching styles with student learning (Lazerson et al., 2000). "Oddly enough, a great amount of 'teaching' takes

place without much thought about how students learn" (Davis, 1993, p. 12). Those faculty who practice instructor-centered teaching styles largely ignore learning theory; therefore, the student experience in college appears to be more determined by tradition than by research-based theory (Gardiner, 1994; Grubb, 1999; Lazerson et al., 2000; Stage et al., 1998).

Learner-centered Teaching and Student Learning:

Research on learner-centered approaches to teaching that focus on active student learning indicates that it produces greater student gains in academic content and skills, higher levels of student enthusiasm and morale, and greater gains in problem solving and critical thinking skills (Grasha, 1996; Terenzini & Pascarella, 1994). Learner-centered approaches are based on the theory and research of learning and faculty are finding that these approaches are more effective in ensuring students achieve the goals and learning outcomes that faculty desire (Campbell & Smith, 1997).

As faculty begin to practice more learner-centered teaching, they take into consideration learning theory along with the knowledge and learning styles of students. They may abandon the assumption that student performance is only a function of pre-college student variables (Millar, 1996). They may reject the role of weeding out or sorting students. Faculty may then focus on ensuring all students develop learning skills as a result of their presence in class. These changes can increase the chance that students will learn more in courses and be more successful in meeting their educational goals.

For years, numerous researchers and respected educators have clearly encouraged the use of more learner-centered approaches to teaching that engage students in active learning and result in higher level learning outcomes (Astin, 1985; Chickering and

Gamson, 1987; Cross, 1990; Eble, 1983; Erickson, 1984; McKeachie, 1990; Terenzini & Pascarella, 1994). When faculty develop a more complete understanding of how learning occurs and apply it to teaching, student learning outcomes will improve (Weimer & Associates, 1996). The goal is to keep students reading, writing, solving, designing, interacting with peers and faculty, and reflecting on their educational experiences (Gardiner, 1994; Meyers & Jones, 1993).

Learner-centered instruction is based on active learning, which arises from two basic assumptions–learning is by nature an active endeavor and different people learn in different manners (Meyers & Jones, 1993). Active learning includes such methods as collaborative and cooperative learning, peer teaching, learning communities, service learning, and technology (Stage et al., 1998). These approaches to teaching represent some current trends to encourage more learner-centered teaching and incorporate more active learning into classroom instruction. Collaborative learning is an educational approach that leads to greater student involvement by having students or students and faculty participate in joint intellectual efforts both within and outside the classroom (Gamson, 1994; Smith & MacGregor, 1992). It equips students with effective teamwork skills and social skills. Peer teaching is the process of students teaching their fellow students and includes such approaches as supplemental instruction and student-led workshops (Stage et al., 1998). The use of learning communities includes a variety of models that restructure the curriculum to link courses or coursework so that students participate together in an integrated learning experience (Tinto, 1997). Learning communities can provide a more coherent academic experience for students and encourage intellectual development. They include the use of such approaches as team

teaching, interdisciplinary content, and integration of skill and content. They have been increasingly used in higher education over the last two decades and have resulted in a positive increase in retention of students (Stage et al., 1998; Tinto, 1997).

Service learning integrates learning with community and public service. Students receive experiences that combine real community needs with learning goals along with student analysis of and reflection on learning experiences (Stage et al., 1998). Technology also provides many opportunities to benefit the learning experiences of students at all levels of intellectual capabilities and students with various learning styles (Stage et al., 1998). Used appropriately, technology can enhance active learning situations by increasing the interaction between students and content, students and teachers, and students and students.

Theories of Change in Teaching

The literature offers little insight into why faculty change teaching styles and what exists is usually found in the literature on teaching improvement. Existing theories or definitions of teaching or teaching style generally do not offer much guidance about making changes in teaching. "How to make such changes and the variables one would have to take into account to do so generally are not included ..." (Grasha, 1996, p. 39). Some theories argue that teachers are born with a particular personality or psychological preference that dictates teaching style, while other theories offer the possibility for growth and change in teaching (Grasha, 1996).

Most faculty spend relatively little time thinking about teaching; so they repeat the traditional approaches (Massy & Wilger, 1995). Yet it is thinking about teaching that generally leads to change in teaching (Grasha, 1996; Grubb, 1999). Change in teaching

may be best understood by viewing faculty as reflective practitioners. Schon (1983, 1987) developed the concept of reflective practice which supports the earlier work of Dewey, Lewin, and Piaget, each of whom believed learning is dependent on integrating experience with reflection and theory with practice (Imel, 1992). The goal of reflection is to become better teachers by learning from experiences in teaching and by examining the relationship between what one knows and what one does. Reflection involves exploring beliefs, values, and assumptions about teaching and learning. Schon (1983) proposed that an unexpected outcome or surprise in the performance of the job initiates reflective thinking and change.

In a qualitative study of community college faculty, Barnes (1996) described change in teaching as a four-stage process for faculty. The first stage is disequilibrium, a result of faculty bringing a traditional paradigm to the classroom that conflicts with the realities of the classroom. The second stage is faculty reflecting on the disequilibrium they experienced which is followed by the third stage, exploring new teaching methods and styles. The fourth stage is restoring equilibrium by adopting and using new methods and styles.

Paulsen and Feldman (1995) discussed the process of change in teaching and provided three criteria that must be met for change to occur. First, faculty experience disconfirmation cues from the environment indicating that their attitudes or behaviors are not achieving the results they wanted. Second, faculty reflect on the experience and compare the outcomes of their behavior to the outcomes they consider important. This may lead to feelings of guilt, anxiety, or inadequacy. Third, faculty must develop a vision of how to change teaching to produce their desired outcomes. Once the three

criteria for change are met, faculty will explore alternatives and implement change. Paulsen and Feldman (1995) acknowledged the importance of the organizational culture on the initiation of change.

Heimlich and Norland (1994) proposed a change process that involves exploration, reflection, and application. Exploration involves gathering information in the performance of the job and interpreting that information. Exploration occurs as a result of facing a crisis or experiencing dissatisfaction with an outcome in teaching. Reflection on teaching beliefs, attitudes and behavior follows exploration. The final step occurs when faculty develop and apply a new belief or behavior to teaching. Prawat (1992) described the change process in a similar manner. He proposed that change begins as dissatisfaction with existing beliefs followed by an exploration of alternatives and finally connecting new beliefs with earlier conceptions.

Reinsmith (1992) proposed that the catalyst for change is dissatisfaction with the current level of the teaching encounter and the subsequent learning that takes place. The teacher then looks for different student learning outcomes, especially in terms of quality and depth. Once the teacher perceives a need for change and the context exists to allow for change, the teacher can develop a new or different vision of teaching. The teacher may then implement the new vision and, if students respond positively, the teacher gradually improves his or her skills and attitudes until the teacher is functioning well within the new vision. Reinsmith (1992) developed a continuum with a series of teaching forms and proposed that as teaching moves through the forms on the continuum, it moves from instructor-centered to more student-centered. As faculty move through the continuum, encounters with students change and move gradually from peripheral

engagement, the instructor-centered end of the continuum, toward educational intimacy, the student- centered end of the continuum.

Change in teaching may also be described as beginning with faculty developing instructional awareness, an understanding of the strategies, techniques, and practices they use along with the assumptions about teaching and learning (Lucas, 1994; Travis, 1995; Weimer, 1990). Developing instructional awareness, as described, is similar to the process of reflection on teaching. Following the development of instructional awareness, faculty gather information from a variety of sources and develop ideas for change. From those ideas, faculty may choose the type of changes to be made and may implement them in teaching.

Kember and Gow (1994) proposed a process for change in teaching based on the work of Kurt Lewin. It begins with diagnosing existing conceptual frameworks and revealing them to the faculty member. That is followed by a period of disequilibrium and conceptual conflict that cause faculty to be dissatisfied with existing conceptions. Finally, faculty must reconstruct or reform a new conceptual framework for practice.

To summarize, change in teaching begins with uncertainty, doubt, an unexpected outcome, a surprise, discomfort or dissatisfaction with the results of teaching, which leads to reflection on teaching (Bonwell & Eison, 1991; Cranton, 1998; Grasha, 1996; Heimlich & Norland, 1994; Kember & Gow, 1994; Paulsen & Feldman, 1994; Prawat, 1992; Reinsmith, 1992; Travis, 1995; Weimer, 1990). During reflection, faculty will critically think about what they are doing and the results they are experiencing. They will also think about the outcomes they desire and begin to explore mentally the options for achieving those outcomes (Grasha, 1996; Heimlich & Norland, 1994). Subsequently,

they may begin to experiment with various alternatives in teaching (Heimlich & Norland, 1994; Katz & Henry, 1988; Paulsen & Feldman, 1994; Prawat, 1992; Reinsmith, 1992; Weimer, 1990). While experimenting with alternatives, faculty may develop a new vision of teaching and may take steps to implement this vision (Paulsen & Feldman, 1994; Reinsmith, 1992; Weimer, 1990). From beginning to end, the change process may occur over a long period of time, perhaps years (Heimlich & Norland, 1994; Katz & Henry, 1988; Miller, 1998; Paulsen and Feldman, 1995).

The theories of change in teaching can provide insights into the process of change but they do not provide many insights into the factors that influence faculty to begin the process of change. Most describe the process as beginning with some type of surprise, dissatisfaction, or unexpected outcome in teaching. Few provide any information about the experiences or situations that cause the surprise, the dissatisfaction, or the unexpected outcomes. This study's goal was to provide information regarding factors that may provide the surprise, dissatisfaction, or unexpected outcomes that lead faculty to reflect and initiate change in teaching.

Factors That May Initiate Reflection and Change in Teaching

Throughout the literature on teaching, there are descriptions of the influences on teaching such as discipline or modeling the behavior of teachers one has had, but very few studies provide insight into the factors that may influence change in teaching. Various elements of the organizational environment or culture are listed by some as providing the impetus for change, but they are mentioned without much discussion or insight into the specific experiences that may influence faculty to begin the process of change in teaching (Cranton, 1998; Grasha, 1996; Heimlich & Norland, 1994; Miller,

1998; Paulsen & Feldman, 1995; Reinsmith, 1992; Weimer, 1990). In a recent study of community college faculty, Grubb et al. (1999) found that many instructors described an odyssey from instructor-centered to learner-centered teaching caused by not being satisfied with the results or effectiveness of the instructor-centered approach. Yet, "...we couldn't begin to say why some instructors had made this odyssey and why others had not..." (Grubb et al., 1999, p. 301).

Grahsa (1996) provides some insight by discussing environmental and other factors as providing the context for change. They provide the uncertainty, doubt, unexpected outcome, surprise, discomfort or dissatisfaction with teaching that triggers reflection and change. Therefore, this study focused on those factors. The factors selected for study were: participation in faculty development programs; the influence of institutional reward structures, administrators, peers, students, and curriculum change; teaching with technology; and teaching distance education classes.

Faculty Development Programs

Faculty development programs are effective in encouraging and assisting faculty to take steps to improve teaching and to become more learner-centered in teaching (Paulsen & Feldman, 1995; Weimer, 1990; Wolverton & Richardson, 1992). They can provide the appropriate environment for change (Haas & Keeley, 1998). Eble and McKeachie (1985) and Jakoubeck (1994) confirm the influence of faculty development programs as an intervention that can improve teaching and help faculty engage in more learner-centered teaching. These programs can introduce faculty to different teaching models and to more learner-centered methods of instruction. They offer faculty opportunities to develop knowledge and insight into the significant amount of knowledge

about teaching and learning that most faculty do not currently possess (Travis, 1995). O'Banion (1997) makes a point of encouraging professional development as a means of preparing faculty and staff to become more learning-centered.

There are a variety of approaches that can be effective in faculty development programs to influence change in teaching. Instructional grants to improve teaching or support innovative teaching can encourage faculty to explore alternatives in teaching (Weimer, 1990). Other approaches that may be effective include roundtables, panels, seminars, workshops, discussion groups, presenters, and instructional resource centers focused on supporting faculty in developing new approaches to teaching (Haas & Keeley, 1998; Halpern & Associates, 1994; Paulsen & Feldman, 1995; Travis, 1995; Weimer, 1990). In addition, national associations and conferences are beginning to provide opportunities for faculty to meet with other faculty from a variety of settings to discuss change and improvement in teaching.

The need for a strong faculty development program to support teaching and its improvement has been noted by many (Massy, Wilger, & Colbeck, 1994; Paulsen & Feldman, 1995; Rice & Austin, 1990). Despite the expressed interest of educators in improving teaching, the support for faculty development has not increased much over the last decade (Cranton, 1998). Additionally, faculty participation in teaching improvement programs is relatively low (Seldin, 1995). To be effective in improving teaching and changing teaching to become more learner-centered, institutions must make a major investment in faculty development programs and find ways to ensure more faculty participate (Gardiner, 1994; Haas & Keeley, 1998). Faculty who participate in various

faculty development programs and activities may encounter experiences or information that initiate reflection and change to learner-centered teaching.

Institutional Reward Structures

Fundamental changes in teaching will not occur without substantial incentives and public recognition for faculty (Bonwell & Eison, 1991; Haas & Keeley, 1998; Halpern & Associates, 1994; Seldin, 1995; Travis, 1995; Weimer, 1990; Weimer & Associates, 1996). Few faculty are self-motivated enough to take on the risks required for accomplishing change in teaching without incentives. Institutions must provide rewards and incentives that ensure faculty participation in change. Yet, institutional reward systems have changed little over the years (Bonwell & Eison, 1991). Many teachers report that the greatest roadblock to improved teaching is the lack of an adequate reward system (Seldin, 1995). Research has consistently found that faculty desire more rewards and recognition than they currently receive (Weimer & Associates, 1996). When institutions provide incentives and rewards for teaching improvement or innovation, faculty may respond by initiating change in teaching.

Administrators

"The influences of administrators on teaching are profound" (Grubb et al., 1999, p. 301). They establish the attitudes toward instruction, the culture of institutions and the value of good teaching. Accomplishing change and improvement in teaching requires administrative support, participation and commitment (Katz & Henry, 1988; Paulsen & Feldman, 1995; Wolverton & Richardson, 1992). If administrators just issue directives about teaching improvement, they will be likely to receive considerable resistance from faculty (Haas & Keeley, 1998; Travis, 1995). Instead, they must support frequent

interaction and collaboration within the faculty, provide effective faculty development programs, and establish teaching centers on campus. They must be explicit about their expectations for change, and they must be patient about change (Travis, 1995).

Patience is required when trying to facilitate change in teaching. Change does not occur overnight. Even when most faculty decide to make changes in teaching, it may take years to accomplish widespread change in an institution. Administrators must be patient about getting faculty involved since those who need to change the most are frequently the last to participate (Grasha, 1996).

Administrators can accomplish a great deal by communicating to faculty that they are listening to them and that they understand the problems faculty face when making changes in teaching. It is also important that administrators take a stand against the status quo in teaching, assuring faculty that change can and must be accomplished (Paulsen & Feldman, 1995). Pitts, White, and Harrison (1999) reported in a study regarding teaching and underprepared students that the majority of faculty were sensitive to the behavior of leaders. They found that strong, openly supportive leaders who served as symbols of integrity, innovation, and commitment encouraged teachers. They reported that faculty want dynamic leadership and more proactive approaches to problems from administrators. Most importantly, faculty felt that the typical administrator could be doing more as a catalyst for change.

Change requires a climate of confidence to be established by administrators (Weimer, 1990). Faculty must feel a general support for their experiments with instructional alternatives such as team teaching, collaborative approaches, and computers. Change sometimes involves the risk of failure on the part of faculty and they must be sure

that administrators understand that and will continue to support them as they search for the most effective approaches and methods of teaching. Administrators must also ensure that institutional policies and procedures be developed that support innovation and change in teaching. When administrators participate actively in teaching improvement and change, faculty will respond positively (Grubb et al., 1999). Thus, administrative support for innovation and change in teaching may influence faculty to initiate change to learner-centered teaching.

Peers

At most institutions, faculty contribute little to the development and improvement of each other's teaching (Cranton, 1998; Weimer, 1990). They generally do not work together on teaching to any great extent; they typically avoid the classrooms of peers; and they rarely visit or observe another's teaching (Massy, Wilger, & Colbeck, 1994). On the other hand, colleagues can play a fundamental role in changing and improving teaching. Faculty may realize effective teaching is not just an accident or a gift at birth if they see good teachers working to be better teachers (Weimer, 1990). If good teachers must work to improve themselves continuously, then less effective teachers begin to understand that they must work to improve and change their teaching. Good teachers are most effective in influencing change in other teachers by communicating to them the value of their efforts to improve teaching (Weimer, 1990).

Academic departments in higher education institutions provide the primary avenues for faculty to interact with peers. Departments have a strong influence over the teaching style and methods of the faculty (Kember & Gow, 1994). "Sometimes an entire faculty's teaching habits – perhaps expressed as 'delivering the content' rather than

stimulating students' learning – can narrowly define what is expected from teachers and discourage change" (Weimer, 1996, p. 308). If faculty in a department are more traditional with little expectation of change in teaching, it is less likely individuals would attempt to change their teaching (Haas & Keeley, 1998). On the other hand, if faculty in a department are more visionary and support change and innovation, individuals are more likely to attempt changes in teaching (Grubb et al., 1999; Haas & Keeley, 1998; Weimer, 1996). In a study of community colleges, Wolverton and Richardson (1992) found that the role and importance of the department varied significantly from college to college. Generally, in institutions with high performing faculty, departments were valued and innovative ideas were incubated, while in colleges with lower performing faculty, departments were simply tolerated by faculty.

Faculty may also interact with peers in other ways than through departments. In a study of community college faculty, Grubb et al. (1999) found that faculty interested in improving and changing approaches to teaching will often seek each other out to support and assist each other. They also found that instructors who were most effective and who practice learner-centered teaching almost always were linked in some way with other faculty. Since faculty who are learner-centered tend to be constructivist, believing learning is a social endeavor, it is not surprising that they should seek out peers and create opportunities to focus on teaching and change (Grubb et al., 1999). Other ways that faculty may communicate with each other about teaching include discussion with peers through roundtables, seminars, colloquia, and other activities focused on teaching and learning.

Although slow to develop, faculty are beginning a dialogue with other faculty about change and improvement in teaching (Meyers & Jones, 1993; Paulsen & Feldman, 1995). Opportunities for interaction and discussion with colleagues about change and improvement in teaching may be key factors in influencing and supporting change and improvement in teaching (LaCelle-Peterson & Finkelstein, 1993; Matthews, 1994; Paulsen & Feldman, 1995). In fact, Hargreaves (1994) suggests that in many cases it may be impossible to accomplish change in schools unless there are opportunities for collaboration and collegiality among teachers.

Students

Students have changed over the last quarter of the twentieth century with the traditional 18-year-old resident student no longer the norm. There has been a substantial increase of non-traditional students including minorities, women, older students, and part-time students. These students are more representative of the population of the United States, but they bring with them new challenges for faculty. They are underprepared, they have different styles of learning, and their educational needs and expectations are different from the traditional students of the past. Underprepared students are those who come to college with inadequate academic preparation, poorly developed study skills and habits, and may not be socially or culturally prepared for the college environment (Gardiner, 1994). Faculty have difficulty in responding to the changed needs and expectations of these students (Cranton, 1998; Katz & Henry, 1988). Many educational, business and political leaders say higher education is not effectively meeting the needs of non-traditional students (Dolence & Norris, 1995; Gardiner, 1994; O'Banion, 1997).

Non-traditional students often view education as a commodity, something that will provide them with a better job, more pay, and a better life (Karabell, 1998). The learning outcomes they expect are different from the traditional students of the past. They often take on large debts to attend college, enrolling in evening and weekend classes, and take longer to complete their degrees. They expect to learn something they do not know and they express their expectations more often than traditional students of the past did. These new students have forced some positive changes in higher education such as ensuring the curriculum includes issues of race and gender (Karabell, 1998). They are also having an impact on faculty attitudes and the way faculty teach (Meyers & Jones, 1993; Plater, 1995). Projections suggest that non-traditional students will continue to participate in higher education in greater numbers in the future, and they will continue to exercise some influence on change in teaching (Gardiner, 1994).

Increasing numbers of underprepared students offer one of the most significant challenges to faculty. Faculty believe that the basic skills of students are diminishing and they repeatedly express concerns about the problem in research studies (Berquist, 1995; Boyer, 1987; Clark, 1987; Stahl, 1981). Pitts, White, and Harrison (1999) report that the majority of faculty believe they have been significantly affected by underprepared students, both professionally and personally. Faculty often do not feel confident in responding to the needs of underprepared students (Stark & Lattuca, 1997). They find traditional instructor-centered teaching does not work well with these students (Meyers & Jones, 1993).

Pitts, White, and Harrison (1999) analyzed how faculty respond to underprepared students in three areas – teaching behaviors, course content and evaluation. Faculty

admitted they often teach students the basic skills that students should have mastered before enrolling in their classes including note taking, reading, etc. They reported that they need to be more flexible and adaptable in teaching, addressing the problem with creativity and innovation. They often approach the problem with curriculum changes and reductions in course content, although several faculty said they reduce content by more thoroughly covering what they believe to be the most essential parts of the course. Pitts, White, and Harrison (1999) concluded that students who are not academically prepared for college significantly affected how faculty taught, how they structured their classes, and how they evaluated students. Additionally, they believed the study suggested that as part of the process of adapting to the needs of these students, faculty redefine their roles as teachers and reassess both teaching and learning.

Just as faculty have preferred ways of teaching, students also have preferred ways of learning. Learning styles of students refers to personal qualities that influence the students' ability to acquire information, interact with other students and with faculty, and participate in various ways in learning experiences (Grasha, 1996). Learning styles of students have been identified and labeled through a variety of cognitive factors, social factors, motives, emotions, problem solving abilities, memory and perceptual processes, and information processing capabilities (Grasha, 1990; Stage, 1998). For instance, Kolb examines teacher and student styles in terms of their preferences for concrete experiences, reflecting on these experiences, creating concepts and theories to explain these experiences and using concepts to solve problems and make decisions (Richlin & Manning, 1995). Even though it is desirable, faculty may or may not incorporate theories of student learning in their teaching styles, strategies or approaches (Grubb et al., 1999;

Stage, 1998). Even when faculty recognize differences in learning styles of students, they may not act upon that knowledge. Yet, when faculty do acknowledge variations in learning styles of students, they may take steps to change or modify their teaching styles to better meet the learning needs of students (Grasha, 1996; Stage, 1998).

Most colleges have procedures or methods for evaluating instruction, including student evaluations of instruction (Grubb et al., 1999). Student evaluations of instruction in community colleges may have more influence on faculty than those at four year colleges since four year colleges generally give greater weight to the research function of faculty (Serow, Brawner, & Demery, 1999). Faculty typically do not use the results of student evaluations of instruction in changing or improving teaching since the accuracy and relevance of student evaluations has always been an issue of controversy in higher education (Grubb et al., 1999). Still, student evaluations may provide a trigger for reflection and change in teaching (Reinsmith, 1992). Paulsen and Feldman (1995) state that a teacher's first concern with disconfirming cues often come from the student ratings of instruction.

Curriculum Changes

For most faculty, methods of teaching spring from the culture of discipline (Cranton, 1998; Prawat, 1992; Weimer, 1996). Discipline influences not only the choice of what to teach but the attitudes, behavior, and perspectives of faculty. Instructors in various disciplines differ substantially in the way they conceive of the nature of their fields, the logical structures of the fields, the organizing principles for truth and methods of inquiry (Donald, 1987, 1990). Disciplines exist to uphold the norms, define the profession, and maintain standards and continuity in scholarly pursuits, but they most

likely do not have the capacity for radical change that may be needed in higher education today (Karabell, 1998).

In his review of higher education research, Gardiner (1994) believed the results suggest higher education needs to rethink its curricula to improve student learning. Traditional curricula and courses generally are not sensitive to the needs, interests, and abilities of students and are not affected by the changing needs of society (Diamond, 1989). New demands are beginning to impact traditional curricula. The increasing demand for vocational relevance by both students and government is beginning to require faculty to go beyond disciplinary boundaries. Additionally, there are new subjects and new fields of inquiry such as feminism and multiculturalism that cross traditional discipline boundaries. Davis (1995) predicted that disciplines will not be able to contain the knowledge explosion of the current environment and that disciplinary paradigms will not be adequate for what faculty will want and need to teach.

There is increasing pressure for curriculum integration, change and reform within many disciplines (Gardiner, 1994; Karabell, 1998). An example is the discipline of mathematics. Guided by the Mathematical Association of America, mathematicians are conducting a major review of the undergraduate curriculum with recommendations due in 2001 (Wilson, 2000). Among other impacts, it is expected that these recommendations will change how math is taught.

There is increasing pressure to change curriculum not only in disciplines, but also in institutions and segments or departments of institutions. Curriculum change in community colleges may be more common than in other types of higher education institutions as they endeavor to serve quickly changing training and education needs in

local businesses and communities. Certainly, such activities as experiential learning and service learning are increasingly being incorporated into community college institutional and departmental curricula to improve student learning outcomes and to insure colleges more effectively meet student learning needs. When faced with curriculum change in their discipline, department or institution, particularly changes intended to better respond to the needs and abilities of students, faculty may begin making changes in teaching styles to accommodate the new curriculum and to improve student learning.

Technology

Many experts believe that higher education has yet to make full use of technology to improve teaching and learning (Dolence & Norris, 1995; McKeachie, 1990; O'Banion, 1997). Generally, faculty are using technology in the classroom to enhance traditional teaching styles in the classroom (Berger, 1993; Frayer, 1999; Parisot, 1997; Wilson, 1994). Since institutions typically just provide the technology to faculty, train them to use the technology, but do not discuss issues of pedagogy, faculty commonly incorporate technology to support traditional approaches to teaching. Just providing technology and technology training to faculty generally does not create the change and reform in teaching and learning that many educators desire (Frayer, 1999).

Despite the lack of widespread reform in education as a result of technology, technology may lead to change in teaching (O'Banion, 1997; Plater, 1995). Introducing technology into the learning environment has been shown to make instruction more learner-centered, to encourage cooperative learning, and to stimulate increased faculty/student interaction (Sivin-Kachala & Bialo, 1995). Technology in the classroom appears to assist faculty in identifying the limitations of traditional pedagogies (Mellow

et al., 1998). Faculty must learn new and different skills to make use of technology in the classroom and may find that they can no longer just serve as content expert (Oblinger, 1996). They may find that in addition to developing new skills, they must also work collaboratively with a team that includes technicians and instructional designers (Parisot, 1997). They may move from the isolation that so many faculty feel in traditional faculty roles to a situation in which they are part of a team responsible for student learning.

Many faculty discover that technology allows new approaches and strategies in the classroom and they may recognize that technology can be used to meet differing learning styles of students (Heterick, 1995). Technology may change the way in which the teacher and learner interact, leading faculty to use more collaborative approaches associated with learner-centered teaching. Students in classrooms with technology tend to become more active learners and that seems to sustain and encourage faculty in making changes to more learner-centered teaching (Frayer, 1999; Mellow, 1998). Additionally, there is greater learner productivity because students tend to be more motivated when technology is used in instruction than by traditional approaches without technology (NCHEMS News, 1996).

Despite the past failure of technology to transform teaching and learning, instructional technology may now be transforming teaching and learning (Frances, Pumerantz, & Kaplan, 1999; Myran, Zeiss, & Howdyshell, 1995). It can stimulate reflection on teaching leading to change in teaching (Alley & Repp, 1996). It provides faculty with new possibilities and opportunities to pursue creative teaching strategies and to improve student learning. Even when faculty initially employ technology in the classroom to enhance traditional approaches, they may find they are not satisfied with

using it just as an add on. "As a result, conversations that begin in the realm of technology generally end up in the arena of pedagogy and curriculum design" (NCHEMS News, 1996, p. 2). As technology becomes more widespread in the traditional classrooms of higher education, faculty will shift from their traditional roles and use technology to provide more learner-centered instruction (Davis, 1995; Filipczak, 1996).

Distance Education

Most colleges in the United States now offer some form of distance education program (Parrot, 1995). Distance education is defined as instructor and students separated by physical distance where technology is used to bridge the instructional gap (Boaz, Elliott, Foshee, Hardy, Jarmon, & Olcott, 1999). There are two primary forms of distance education–synchronous and asynchronous. The difference is whether faculty and students are participating at the same time (synchronous) or not (asynchronous). Asynchronous methods use recorded instructional materials and the technology includes broadcast television, electronically stored media such as video, audio, and computer software, fax machines, voice mail, computer networks, bulletin boards, and e-mail (Parrot, 1995). Synchronous methods offer live interactive instruction and include live interactive television systems, audio conferencing, and real time computer communications (Parrot, 1995).

Traditional classroom experiences do not always prepare faculty for teaching distance education courses. Faculty report they must spend more time in planning and prepare well ahead of time for distance education courses in relation to traditional classroom teaching and, in doing so, they may more thoroughly think about objectives, activities, and other details of the course (Clark, Soliman, & Sungalia, 1985; Gilcher &

Johnstone, 1989; Gunawardena, 1992; Seldin, 1995; Wolcott, 1993). This may result in changes in teaching since distance education faculty generally focus more on teaching approaches and methods. They must find ways of responding to distant students who may have different capabilities, interests and motivations when compared to students in traditional classrooms (O'Banion, 1997; Parer, Croker & Shaw, 1988; Seldin, 1995; Wolcott, 1993; Willis, 1992). In essence, many faculty reflect on teaching as a result of experience with distance education and their teaching in general may improve (Filipczak, 1996; Parer, Croker, & Shaw, 1988; Wolcott, 1993). Clark, Soliman, and Sungalia (1985) report that teaching either distance education or traditional classes helped the other, but generally, there was a greater benefit of distance teaching on traditional teaching. In another study of distance teaching, two thirds of the faculty surveyed said they had gained professionally from their distance teaching experiences (Parer, Croker, & Shaw, 1988).

In addition to the few empirical studies that include information regarding how distance education may impact traditional classroom instruction, there is also some anecdotal evidence that distance teaching may influence change in teaching. Schlenker (1994) reported that his teaching overall was enhanced by his experience teaching on interactive television and that he developed new teaching techniques and strategies for improving all courses he taught. Boston (1992) believed he was a better teacher as a result of developing and teaching distance education courses because he was able to create more active learning in his traditional classes. Gunawardena (1992) reported that as result of teaching distance education courses, she became a more effective and reflective teacher. Norquay (1993) believed that teaching distance education will assist

any teacher in becoming better in the classroom due to the time spent in thinking about, planning and preparing materials.

There is evidence that as a result of teaching distance education courses, faculty may change roles, practices, and attitudes (Beaudoin, 1990; Dillon, 1989; Dillon & Walsh, 1992; O'Banion, 1997; Plater, 1995; Strain, 1987). The experience of distance education may serve as a trigger that initiates reflection and change in teaching approaches and methods. As a result, faculty who teach distance education may move from an instructor-centered to a learner-centered teaching style.

Summary

Theories of change in teaching generally agree that change occurs as a result of reflection on teaching and reflection occurs as a result of uncertainty, doubt, an unexpected outcome, a surprise, discomfort or dissatisfaction with the results of teaching. There is evidence that the following factors may provide the context in which faculty experience those feelings or situations and begin to reflect and change their teaching: participation in faculty development programs; the influence of institutional reward structures, administrators, peers, students, and curriculum changes; teaching with technology; and teaching distance education classes. Therefore, this study focused on these factors.

CHAPTER III

Design of the Study

Introduction

Most faculty in higher education practice an instructor-centered teaching style despite evidence that a learner-centered style is more likely to enhance student learning (Gardiner, 1994; Stage et al., 1998). Since it is not well understood why some faculty change to more learner-centered teaching and others do not, it is important to identify factors that may influence faculty to make that change. This was an ex post facto study that sought to determine the relationships between the selected variables of participation in faculty development, faculty rewards and incentives, curriculum changes, use of technology in the classroom, teaching distance education, and the influence of students, peers and administrators and the independent variable of change from instructor-centered to learner-centered teaching. A questionnaire developed by the researcher was used to gather the relevant data. The questionnaire measured the self-reported extent of change from an instructor-centered teaching style to a learner-centered teaching style, and the self-reported extent to which the independent variables played a role in the change. This chapter describes in detail the approach used to address the research questions.

Research Questions

1. What were the background characteristics of the faculty surveyed? These characteristics included age, gender, highest degree held, teaching field, and years of teaching experience. The data were intended to provide descriptive statistics for the study.

2. What, if any, changes were made from instructor-centered to learner-centered teaching in the past five years by the faculty surveyed?
3. How was participation in faculty development programs or activities related to the extent of change from instructor-centered to learner-centered teaching? The components addressed were participation in campus faculty development programs, involvement in campus centers for teaching and learning, and attendance at professional meetings and conferences.
4. How were institutional rewards and incentives related to the extent of change from instructor-centered to learner-centered teaching? The components addressed were financial rewards for teaching excellence or innovation, institutional recognition for teaching excellence or innovation, and faculty grants to develop teaching excellence or innovation.
5. How was administrative support and encouragement for change and innovation in teaching related to the extent of change from instructor-centered to learner-centered teaching? The component addressed was administrative support and encouragement for change and innovation in teaching and administrators include deans, directors, vice-presidents, and the president of the institution.
6. How was faculty peer influence related to the extent of change from instructor-centered to learner-centered teaching? The components addressed were the influence of peers in a faculty member's department, faculty roundtable discussions, and informal discussion with peers outside the department.
7. How were students related to the extent of change from instructor-centered to learner-centered teaching? The components addressed were the number of underprepared

students, student learning outcome expectations, student learning style preferences, and student evaluation of instruction.

8. How was curriculum change related to the extent of change from instructor centered to learner-centered teaching? The components addressed were institutional curricular change, departmental curricular change, and disciplinary curricular change.
9. How was using technology in the classroom related to the extent of change from instructor-centered to learner-centered teaching? The component addressed was the use of technology in the classroom. Technology included computers, videoplayers, laser disk players, video projectors, Internet access, student computers and various other hardware and software.
10. How was teaching distance education courses related to the extent of change from instructor-centered to learner-centered teaching? The components addressed were teaching live instructional television classes, teaching telecourses, or teaching online classes.
11. What was the interaction of the elements in research questions 3 through 10 with regard to influencing faculty to change from instructor-centered to learner-centered teaching?

Setting for the Study

The institution for the study was Oklahoma City Community College in Oklahoma City, Oklahoma. The college opened for classes in Fall 1972 with an enrollment of 1,049 students and in Fall 2000 enrolled over 10,000 students in credit classes. The highest degree offered is the associate degree, which is offered in over 60 programs. The college also provides an extensive range of non-credit courses, education,

and training programs to businesses and the community in central Oklahoma. The college is accredited by the Commission on Institutions of Higher Education of the North Central Association of Colleges and Schools. The college is a member of the American Association of Community Colleges.

Opportunities for faculty to participate in various faculty development programs and activities have been increasing at the college in the last decade since faculty development was included as a priority for the college in official planning documents. The college provides grants up to about $2,500 to assist faculty in developing innovative teaching projects. Faculty also have access to limited travel funds for conferences and meetings. The college provides on-campus workshops and seminars, most of which have been focused on technology training in the last decade. Twice each year, the academic area sponsors roundtables for full-time faculty the week before Fall and Spring classes begin and all full-time faculty are expected to attend. The roundtables are focused on various issues related to teaching and learning. An additional opportunity for development is called a faculty externship. The externship provides funding for faculty to work within a business related to their field for short periods during the summer months. Generally faculty in occupational or technical programs are the foci of the externships.

All full-time faculty have private or semi-private offices with computers and printers that are replaced at least every three years. All computers are networked and have access to e-mail, the Internet, and various software programs designed to assist faculty in developing programs for the traditional classroom or distance education courses. Throughout the history of the college, faculty have had access to support staff

to assist with the development of classroom or distance education instructional materials. The college developed a Center for Learning and Teaching in 2000 centralizing professional and classified staff who plan faculty development activities and who assist faculty with instructional materials.

Approximately 30 percent of the existing 100 classrooms have multimedia equipment including computers, video projectors, laser disc players, videotape players, slide projectors. They also have direct access to the Internet through the college network. Faculty may also request that portable multimedia equipment be delivered to classrooms that do not have assigned multimedia equipment. Approximately 25 percent of the classrooms on campus have student computers, generally about 20 to 23 stations per classroom

The college provides various open labs to students with the largest labs being the Communications Lab, Science Center, Math Lab, and Computer Science Lab. All labs provide students with access to tutors, computers, software and other equipment. The computers are networked and have access to the Internet. The college library also has 30 to 40 computers that provide students with access to the Internet. All computers on campus also provide access to the library's automated system, which includes the catalog, multiple electronic databases, electronic interlibrary loan requests, and the ability to ask for assistance from a reference librarian electronically. The College website provides students with access to the library system as well as access to multiple department and faculty home pages.

All students have free e-mail accounts. Although the college does not require that students use the accounts, many faculty are now requiring students to access their e-mail accounts for instructional purposes.

Participants

The participants selected for study were all full-time faculty at Oklahoma City Community College. Both full-time and part-time faculty are required to have at least a master's degree and 18 graduate hours in the discipline in which they teach. Exceptions are rare and are only in specific occupational or technical programs. In the Fall semester 2000, there were 112 full-time faculty at the college and over 300 adjunct faculty who teach credit courses. Full-time faculty members teach approximately 50 percent of the sections offered by the college. The faculty also serve on a wide range of institutional committees and task forces. The Faculty Association, which includes approximately 70 percent of the full-time faculty on campus in its membership, provides unofficial input to the administration of the college.

All faculty are assigned to one of six instructional divisions, each division with a dean. Each instructional division has one or more departments of varying sizes with faculty members serving as department chairs on a rotating basis. The departments typically include more than one subject area although a few are focused on one subject area. Department chairs are teaching faculty and receive release time for two classes per semester to serve as department chair. They may serve as department chairs from one to three years with three years being the maximum time. Department chairs screen and interview applicants for part-time faculty assignments, schedule classes, and assign full-

time and part-time faculty to classes. All full- and part-time faculty report to the Dean of their division, so department chairs have no official supervisory responsibility.

The college offered distance education courses since it first opened in 1972. The first distance education courses were delivered through the statewide-televised instruction system that was two-way audio and one-way video. That system has now been upgraded to a statewide two-way video and two-way audio system. In 1981, the college began offering telecourses. There are currently over 40 different telecourses available to students and each semester over 600 students enroll in those courses. Full-time and part-time faculty both teach telecourses. In 1998, the college began offering online courses over the Internet and in Fall 2000, 28 online courses were offered. Full-time faculty teach all online courses. The college plans to increase the number of online courses offered each semester.

Independent Variables

Information on the background characteristics – age, gender, highest degree, teaching field, and years of teaching experience – was collected and used as co-variates, when necessary. The relevant independent variables explored in the study were classified under these general headings: participation in faculty development, faculty rewards and incentives, curriculum changes, use of technology in the classroom, teaching distance education classes, and the influence of students, peers, and administrators. The following lists the components of each independent variable.

From Research Question 3, regarding the variable participation in faculty development programs, the following components were explored: participation in campus

faculty development programs, involvement in campus centers for teaching and learning, and attendance at professional meetings and conferences.

From Research Question 4, regarding the variable institutional rewards and incentives, the following components were explored: financial rewards for innovation and excellence in teaching, institutional recognition for innovation and excellence in teaching and faculty grants to develop teaching innovation and excellence.

From Research Question 5, regarding the variable administrators, the following component was explored: administrative support and encouragement for change and innovation in teaching.

From Research Question 6, regarding the variable peers, the following components were explored: the influence of peers in a faculty member's department, faculty roundtable discussions focused on teaching and learning, and informal discussion with peers outside the department.

From Research Question 7, regarding the variable students, the following components were explored: the number of underprepared students, the expected learning outcomes of students, student learning style preferences, and student evaluation of instruction.

From Research Question 8, regarding the variable curriculum change or reform, the following components were explored: institutional curricular changes, departmental curricular changes, and disciplinary curricular changes.

From Research Question 9, regarding the variable technology, the following components were explored: the faculty member's use of technology in the traditional classroom. Technology in this case is loosely defined and may include computers,

videoplayers, laser disk players, video projectors, Internet access, student computers and various other hardware and software.

From Research Question 10, regarding the variable distance education, the following components were explored: teaching live instructional television classes, teaching telecourses, and teaching online classes.

Dependent Variable

The dependent variable in this study was the extent of change from instructor-centered to learner-centered teaching among faculty.

Instrumentation

A survey instrument entitled Faculty Survey, developed by the researcher, was used for obtaining data regarding the influence of the independent variables on change from instructor-centered to learner-centered teaching. The following is a breakdown of how each research question was addressed in the survey.

To answer Research Question 1, the following background information was solicited from faculty: age, gender, highest degree held, teaching field, years of teaching at the college and total years of teaching experience. Descriptive statistics were provided for these variables and selected variables served as co-variates in subsequent analyses of research questions.

To answer Research Question 2, faculty were to indicate current teaching style and teaching style five years before on a scale ranging from one to ten, with the smaller number indicating a student-centered teaching style and the larger number indicating an instructor-centered teaching style. This procedure provided a measure of the extent and direction of change in teaching style among the faculty in the last five years. It is

generally agreed by experts that change in teaching is a multi-year process; therefore, a five-year time frame seemed like a reasonable time period to examine the faculty's past and current teaching styles. By contrast, a longer time frame would have been burdened by the problem of faculty recall and a shorter one by virtue of the fact that change takes some time to develop. To ensure consistency in understanding the concepts of learner-centered and instructor-centered teaching, the following definitions were provided to respondents:

Instructor-centered teaching:

> Teaching is primarily a matter of presenting the instructor's knowledge, managing the learning environment, and developing learning objectives, learning activities, and tests. The primary methods of instruction are lecture, discussion, and demonstrations and tests generally emphasize recall of factual or memorized information.

Learner-centered teaching:

> Teaching is primarily a matter of facilitating student learning, focusing on learner empowerment, autonomy, and self-directed learning. Teaching methods include active learning strategies, such as collaborative or cooperative learning, while tests emphasize more than the recall of memorized or factual information.

Two additional questions were also on the survey to validate that respondents understood the difference between instructor-centered and learner-centered teaching.

To answer Research Questions 3 through 10, respondents were asked to indicate the extent of influence of each component of the independent variables on any change they have made in their teaching style through the use of a five-point scale with "1" representing *no influence* and "5" representing *high influence.*

Research Question 11 was intended to provide information on the interaction of the independent variables in questions three through ten and was not be included in the questionnaire.

Additionally, faculty were asked two open-ended questions at the end of the survey, which allowed them the opportunity to indicate other influences on their change in teaching style or to add any comments or explanations they wished. This information was used as supplemental findings.

Administration of the Survey

After approval of the OU Institutional Review Board and from the Director of Research at Oklahoma City Community College, the surveys were delivered to the mailboxes of all full-time faculty on November 28, 2000. A letter from the researcher accompanied the survey to explain the study and the importance of responding to the survey. Participants were asked to return the completed survey to the college's Director of Research through campus mail. The survey was sent to all full-time faculty again the week of December 4. Two e-mails were also sent to faculty during the weeks of December 4 and December 11, 2000 as reminders to complete and return the survey.

Data Analysis

Research Question 1—*What were the background characteristics of the faculty surveyed?*—provided descriptive statistics on the participants and selected characteristics served as co-variates in subsequent analyses.

For Research Question 2—*What, if any, changes were made from instructor-centered to learner-centered teaching in the past five years by the faculty surveyed?*—

respondents were asked to indicate their teaching style five years ago and their current teaching style. The difference between these two points was tested using ANOVA.

For research questions 3 through 10, each component of the independent variables was measured on a five-point scale with "1" representing *no influence* and "5" representing *high influence.* Linear regression was used to test each component of the independent variables with the measure of the extent of change in teaching, which was the dependent variable.

For Research Question 11—What was the interaction of the elements in research questions 3 through 10 with regard to the extent of change from instructor-centered to learner-centered teaching?—partial correlation was performed on the most statistically significant components of each independent variable, but no significant paths resulted. The results of the partial correlation of the dependent and independent variables were used to provide a response.

Limitations

1. The variables selected for study may not necessarily encompass all factors related to instructional change.
2. The participants were from a single two-year college and results may not be generalized to all two-year colleges.
3. The psychological background of participants, specifically characteristics of faculty that may have predisposed them to be more reflective, was not factored into the study.
4. The study relied on self-reporting by the participants.

5. The instrument used for the study was developed by the researcher and therefore, has not been tested for reliability and validity.

CHAPTER IV

Data Analysis

Introduction

As stated in Chapter 1, the study reported here examined the factors related to change from instructor-centered to learner-centered teaching. Eleven research questions guided the study and the analysis of data presented in this chapter was organized by those questions.

The first research question was related to the background characteristics of the participants. The focus of the second question was change in teaching style in the past five years, which was the dependent variable for the study. Questions 3 through 10 included the eight variables identified that might have influenced faculty to make changes in their teaching styles. The variables were participation in faculty development programs or activities, institutional rewards and incentives, administrative support and encouragement for change and innovation in teaching, faculty peer influence, students, curricular change, using technology in the classroom, and teaching distance education. Each variable consisted of one or more components totaling 21 in all. The final research question related to the interaction of the independent variables used in the study.

A questionnaire, sent by campus mail in Fall 2000 to all 112 full-time faculty at Oklahoma City Community College, was used to collect data for the study. A total of 78 surveys were returned yielding a response rate of 69 percent. Exactly 58 (74%) of the 78 respondents indicated they had made a change in teaching style in the past five years. The other 20 respondents (26%) indicated no change in teaching style in the past five

years. Since the study was concerned with change in teaching, only the surveys from the 58 respondents who indicated a change in teaching style were used for the data analysis.

Dependent Variable

The dependent variable, change in teaching style in the past five years, was measured using two scales on the survey, both numbered from one to ten. The left end of the continuum represented learner-centered teaching and the right end represented instructor-centered teaching. Definitions for both were included with the scales. On the first scale, faculty indicated their teaching style five years ago while on the other they indicated their current teaching style. The difference between the numbers marked on each scale revealed the extent to which faculty had made changes in their teaching styles in the past five years. Of the 78 respondents, 58 (74%) indicated a change in teaching style and all 58 indicated a change from an instructor-centered to a learner-centered style.

To validate that faculty understood the difference between the two styles, two questions were included in the survey using elements of the definitions provided for the two teaching styles. The first question asked how often faculty used student feedback to change instructional strategies. Using student feedback to change instructional strategies is considered a characteristic of a learner-centered teaching style (Grasha, 1996). The second question asked how often faculty viewed themselves primarily as a knowledge provider as opposed to a resource person to students. Learner-centered faculty generally indicate they view themselves as a resource person rather than a knowledge provider (Grasha, 1996). Linear regression was used to find the correlation between the validation questions and the previous/current teaching style and the extent of change in teaching style. This resulted in a significant correlation between the first validation question and

the extent of change in teaching ($r = 0.281$, $p < .05$). Based on this analysis, it may be assumed that the respondents had a reasonable understanding of the difference between the two teaching styles.

Table 1

Data Analysis for Validation Questions – Understanding the Differences Between Instructor-Centered and Learner-Centered Teaching Styles

	Previous Instructor-Centered Style	Current Learner-Centered Style	Style Difference
	r	r	r
Adjust/Feedback	0.065	0.183	0.281*
Knowledge/ Resource	0.273	0.092	0.250

*$p < .05$

Research Question 1

Research question one *What were the background characteristics of the faculty surveyed?* was addressed in survey questions one through five. The mean age of respondents was 50.4 years and the median age was 52 years. The mean age of all full-time faculty at the college was 48.9 years (Oklahoma City Community College, 2000). Respondents' gender included 35 (61%) who were female and 22 (38%) who were male (1% not responding). All full-time faculty at the college were evenly split between male and female (Oklahoma City Community College, 2000). Respondents were asked to indicate teaching field and provided the following information:

	n	%
Arts	5	8.6
Humanities	6	10.3
Business	4	6.9
Health	12	20.9
Technology	1	1.7
Social Science	12	20.7
Science	9	15.6
Math	5	8.6
No response	4	6.9
Total	58	100 %

The mean of number of years teaching at Oklahoma City Community College (referred to as OKCCC from this point on) for respondents was 13.7 years and the median was 12 years. The mean of the total number of years of teaching experience for respondents was 18.8 years and the median was 17.5 years. Highest degree held included: one with an associate's degree (1.7%); two with bachelor's degrees (3.4%); 41 with master's degrees (70.7%); eight with doctoral degrees (13.8%); three with professional degrees (5.2%); and three did not respond to the question (5.2%). Degrees held by all full-time faculty at OKCCC are as follows: 2.7% held less than a bachelor's degree; 6.4% held a bachelor's degree; 78.2% held a master's degree; and 12.7% held doctorates (Oklahoma City Community College, 2000).

Research Question 2

Research Question 2 *What, if any, changes were made from instructor-centered to learner-centered teaching in the past five years by the faculty surveyed?* was addressed in question 6 on the survey. Of the 78 respondents, 58 (74%) indicated a change in teaching style and all 58 indicated a change from instructor-centered to learner-centered teaching. For the 58 respondents who indicated change, the difference of the prior (instructor-centered) and the current (learner-centered) teaching styles on the scales provided in the

survey created the dependent variable. Linear regression was used to determine if there was a connection between the respondents' prior teaching style and their current teaching style. This resulted in an adjusted r square of 0.439 ($p < .01$) indicating a significant difference between prior and current teaching styles existed.

Table 2

Research Question 2 – Analysis of Difference Between Teaching Style Five Years Ago and Current Teaching Style

	Descriptive Statistics		Regression-Anova		
	Mean	St. Dev.	Adj. r-sq.	F	p
Teaching Style Five Years Ago*	6.41	1.96	0.439	45.574	0.000
Current Teaching Style*	4.12	1.57			

*n = 58

Research Question 3

Research question 3 was *How was participation in faculty development programs related to the extent of change from instructor-centered to learner-centered teaching?* The components of the independent variable were addressed in the survey as follows: the influence of participation in campus faculty development programs in survey question 7; the influence of involvement in campus centers for teaching and learning in survey question 8; and the influence of attendance at professional meetings and conferences in survey question 9. Linear regression was used to test each component of the independent

variable with the measure of the extent of change in teaching, the dependent variable. This resulted in the component, participation in campus faculty development programs, being significant with an r of 0.275 ($p<.05$). Background variables found to be significant with this component of the independent variable were age and number of years of experience at OKCCC (see Table 3).

No significant effects were found on the dependent variable by the other two components of this variable: (1) involvement in campus centers for teaching and learning and (2) attendance at professional meetings and conferences (see Table 3).

Research Question 4

Research question 4 was *How were instructional rewards and incentives related to the extent of change from instructor-centered to learner-centered teaching?* The three components of the variable were (1) financial rewards for teaching excellence and innovation, (2) institutional recognition for teaching excellence and innovation, and (3) faculty grants to develop teaching excellence and innovation. The component financial rewards for teaching excellence and innovation was addressed in questions 10 and 11. Survey question 10 was perceived financial rewards for teaching excellence and innovation and survey question 11 was actual financial rewards awards for teaching excellence and innovation. Institutional recognition for teaching excellence and innovation was addressed in survey question 12 and faculty grants to develop teaching excellence and innovation was addressed in survey question 13. Linear regression was used to test each component of the independent variable with the measure of the extent of change in teaching, the dependent variable. No significant effects on the dependent variable were found by the components of this independent variable (see Table 3).

Table 3

Correlation – Dependent Variable (Change in Teaching), Components of Independent Variables (Survey Questions 7 Through 28), and Selected Background Characteristics

Survey Question	Teaching Change	Partial Correlations of Change in Teaching		
		Age	OKCCC Experience	Total Experience
Q7	0.275*	0.278*	0.272*	0.262
Q8	0.126	-0.127	-0.186	-0.133
Q9	0.141	0.119	0.125	0.159
Q10	0.095	0.099	0.094	0.063
Q11	0.014	0.018	0.023	-0.034
Q12	0.234	0.249	0.233	0.148
Q13	0.065	-0.063	-0.060	-0.030
Q14	0.152	0.165	0.155	0.124
Q15	0.238	0.234	0.259	0.240
Q16	0.041	0.047	-0.006	0.063
Q17	0.158	0.110	0.095	0.232
Q18	0.335*	0.300*	0.333*	0.300*
Q19	0.344*	0.334*	0.286*	0.317*
Q20	0.230	0.217	0.168	0.207

Table 3 (continued)

Survey Question	Teaching Change	Partial Correlations of Change in Teaching: Age	OKCCC Experience	Total Experience
Q21	0.102	0.090	0.024	0.050
Q22	0.084	0.099	0.088	-0.029
Q23	0.182	0.192	0.240	0.164
Q24	0.079	0.123	0.125	0.132
Q25	0.202	0.212	0.192	0.239
Q26	0.047	-0.059	0.007	-0.029
Q27	0.024	0.029	0.059	0.056
Q28	0.166	-0.170	-0.182	-0.136

*p less than at least .05

Research Question 5

Research question 5 was *How was administrative support and encouragement for change and innovation in teaching related to the extent of change from instructor-centered to learner-centered teaching?* Administrative support and encouragement for change and innovation in teaching was addressed in survey question 14 with administrators defined as deans, directors, vice-presidents, and president. Linear

regression was used to test the independent variable with the measure of the extent of change in teaching, the dependent variable. No significant effects on the dependent variable were found by this independent variable (see Table 3).

Research Question 6

Research question 6 was *How was faculty peer influence related to the extent of change from instructor-centered to learner-centered teaching?* The three components of this variable were addressed in the survey: peers in a faculty member's department in survey question 15; faculty roundtable discussions in survey question 16; discussion with peers outside the department in survey question 17. Linear regression was used to test each component with the measure of the extent of change in teaching, the dependent variable. No significant effects on the dependent variable were found by the components of the independent variable (See Table 3)

Research Question 7

Research Question 7 was *How were students related to the extent of change from instructor-centered to learner-centered teaching?* There were four components of this independent variable addressed in the survey as follows: the number of underprepared students in survey question 18; student learning outcome expectations in survey question 19; student learning style preferences in survey question 20; student evaluation of instruction in survey question 21. Linear regression was used to test each component with the measure of the extent of change, the dependent variable.

The first component, the number of underprepared students, yielded an r of 0.335 ($p < .05$). Background variables found to be significant with this component of the independent variable were age, number of years experience at OKCCC, and total number

of years of teaching experience (see Table 3). The second component, student learning outcome expectations, yielded an r of 0.344 ($p < .05$). Background variables found to be significant with this component of the variable were age, number of years experience at OKCCC, and total number of years teaching experience (see Table 3).

No significant effects on the dependent variable were found by the other two components of this independent variable: (1) student learning style preferences and (2) student evaluation of instruction (see Table 3).

Research Question 8

Research question 8 was *How was curriculum change related to the extent of change from instructor-centered to learner-centered teaching?* There were three components of this independent variable addressed in the survey as follows: institutional curricular change in survey question 22; departmental curricular change in survey question 23; disciplinary curricular change in survey question 24. Linear regression was used to test each component of the independent variable with the measure of the extent of change from instructor-centered to learner-centered teaching, the dependent variable. No significant effects on the dependent variable were found by the components of this independent variable (see Table 3).

Research Question 9

Research question 9 was *How was using technology in the classroom related to the extent of change from instructor-centered to learner-centered teaching?* The component, the use of technology in the classroom, was addressed in survey question 25. No significant effects on the dependent variable were found by the independent variable using technology in the classroom (see Table 3).

Research Question 10

Research question 10 was *How was teaching distance education courses related to the extent of change from instructor-centered to learner-centered teaching?* There were three components of this independent variable addressed in the survey as follows: teaching live instructional television classes in survey question 26; teaching telecourses in survey question 27; teaching online classes in survey question 28. No significant effects on the dependent variable were found by the components of this independent variable (see Table 3).

Research Question 11

Research Question 11 was *What was the interaction of the elements in research questions 3 through 10 with regard to influencing faculty to change from instructor-centered to learner-centered teaching?* Partial correlation analysis was used to identify interactions among variables and significant paths for a causal model. The analysis resulted in few interactions among background characteristics, significant independent variables and the dependent variable, and change in teaching. No clear paths were found in the causal modeling procedure. To provide a response to this research question, the significant correlations from Table 3 were used (see Figure 1). The three significant components were: on-campus faculty development programs; the number of underprepared students in classes; and students' own expectations of their learning. Partial correlation of the dependent variable and the background characteristics resulted in: (1) age and number of years teaching at OKCCC being significant with the component on-campus faculty development programs; (2) age, number of years teaching at OKCCC, and total number of years teaching being significant with the component number of

underprepared students in classes; and (3) age, number of years teaching at OKCCC, and total number of years teaching being significant with the component students' own expectations of their learning (see Figure 1).

Additional Influences on Change

Respondents were provided with the opportunity in the survey to list additional influences on changes they made in their teaching styles. Additional influences that were listed, for the most part, were related to the variables selected for study. Four respondents listed aspects of technology, five listed aspects of student populations, four listed aspects of faculty development, one listed high number of years of teaching experience, and one listed a curricular issue. Responses not related to variables in the study were student advisement, assessment issues, workplace needs, and children (of respondents) in college.

Additional Comments

At the end of the survey, faculty were asked to add any information or explanation they wished. Seven respondents indicated they use either instructor-centered or learner-centered methods, depending on the content or course they teach. Five respondents indicated student feedback as an important influence on how they teach. Other comments included: changing teaching style previous to the five year period provided in survey question 6, college culture of innovative teaching at OKCCC, importance of workplace needs, lack of time as a barrier to changing teaching style, community college teaching needing more study and more respect, importance of incorporating active learning strategies, need for college to financially support teaching

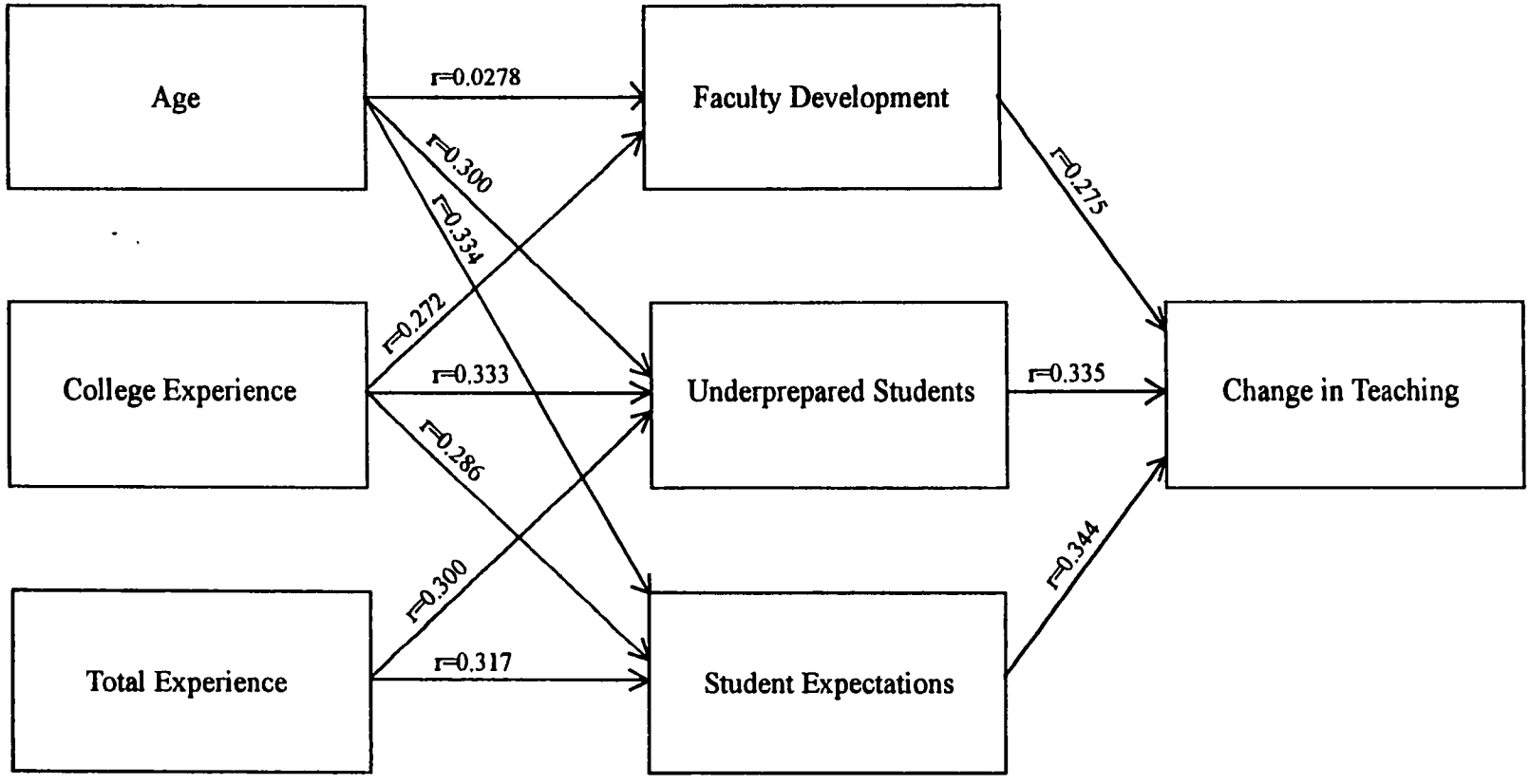


Figure 1. Results of Correlation Analysis – Significant Correlations

innovation, influence of faculty member's past teachers, and plans to use the campus center for learning and teaching in the future.

Summary

This chapter provided the results of the study. Three components of the independent variables studied were found to be significant with the dependent variable, change in teaching. The three components were (1) on-campus faculty development programs, (2) the number of underprepared students, and (3) students' own expectations of their learning. Partial correlation with the significant components, the dependent variable and the background characteristics resulted in the following: (1) age and number of years experience at Oklahoma City Community College were significant with on-campus faculty development programs; (2) age, number of years experience at Oklahoma City Community College, and total years experience were significant with the number of underprepared students in classes; (3) age, number of years experience at Oklahoma City Community College, and total number of years teaching were significant with students' own expectations of their learning. For the research question related to the interaction of significant variables, no significant paths for a causal model resulted from partial correlation analysis.

CHAPTER V

Summary and Discussion

Introduction

As an aid to the reader, the final chapter of the dissertation begins with a restatement of the research problem and reviews the methods used in the study. The major sections of the chapter summarize the results and discuss their implications.

Problem

Most faculty in higher education practice an instructor-centered teaching style even though a learner-centered style is more likely to result in greater gains in intellectual development, critical thinking and problem solving skills, and interpersonal and intercultural skills (Gardiner, 1994; Stage et al., 1998). Since it is not well understood why some faculty change to more learner-centered teaching and others do not, it is important to identify factors that may influence faculty to initiate that change. Therefore, factors influencing change from instructor-centered to learner-centered teaching were the focus of this study. The factors selected for the study were: participation in faculty development programs; the influence of institutional reward structures, administrators, peers, students, and curriculum change; teaching with technology; and teaching distance education classes.

Methodology

The study was an ex post facto study with a survey developed by the researcher to gather information on factors that influence changes in teaching styles. Faculty self-reported the extent of change from their teaching style five years ago to their current teaching style. The survey then asked those faculty who reported a change in teaching

style a series of questions about factors that may have influenced them to change their teaching style. The questions included components of variables identified in the literature review that might influence change and improvement in teaching. Data were analyzed using linear regression and partial correlation.

Results

Of the 78 respondents, 58 (74%) faculty indicated a change in teaching style in the past five years. In all cases, the change was from instructor-centered to learner-centered teaching. There was a statistically significant difference in the respondents' prior teaching style (instructor-centered) and current teaching style (learner-centered). The variables found to be significant in influencing change in teaching style were faculty development and characteristics of students. Specifically, the study identified on-campus faculty development programs, the number of underprepared students in classes, and students' own expectations of their learning as the significant components of those two variables.

Partial correlation was used to determine which background characteristics were significant with the components of the variables studied. For the component on-campus faculty development programs, age and years of teaching experience at Oklahoma City Community College (OKCCC) were significant. With the component underprepared students in classes, age of faculty, years of teaching experience at OKCCC, and total years of teaching experience were significant. For the component students' own expectations of their learning, age of faculty, years of teaching at OKCCC, and total years of teaching experience were significant.

Relationship to Prior Research

Faculty development programs were found to be significant influences on changing from instructor-centered to learner-centered teaching. This is consistent with other researchers and experts who support and study the use of faculty development to change and improve teaching (Eble & McKeachie, 1985; Grubb, 1999; Haas & Keeley, 1998; Jakoubek, 1994; Paulsen & Feldman, 1995; Weimer, 1990; Wolverton & Richardson, 1992). Grahsa (1996) found that faculty development facilitates reflection on teaching, a first step toward faculty thinking about and exploring changes they can make in their own practice. Grubb (1999) reported in his study of community college teaching that colleges can impact changes in teaching through the use of effective staff development programs. He found that faculty development was effective in assisting faculty in reflecting about teaching and changing their approaches to teaching, and that those who participate are more likely to move toward learner-centered teaching. Katz and Henry (1988) observed that the idea of pedagogy is strange for most faculty in higher education, but when they are introduced to the theories and research of student learning, they find it impossible to continue to teach students using traditional or instructor-centered methods.

The number of underprepared students in classes was also found to be a significant variable in influencing change to learner-centered teaching. Underprepared students are those who come to college with inadequate academic preparation, poorly developed study skills and habits, and who may not be socially or culturally prepared for the college environment (Gardiner, 1994). This concurs with findings of other studies that report underprepared students significantly impact or change teaching. Stark and

Lattuca (1997) reported that underprepared students significantly affected how faculty taught, how they structured their courses and how they evaluated students. Pitts, White, and Harrison (1999) found that faculty viewed themselves as being significantly affected by the poor academic preparation of students. They found that adjusting and adapting teaching practices was a key feature of faculty who work in an environment dominated by underprepared students. "To perform optimally, the teacher must go beyond the traditional role" (Pitts, White, & Harrison, 1999, p. 355). They noted that faculty must continually redefine their roles and reassess teaching and learning strategies when there are large numbers of underprepared or nontraditional students in their classes. In other words, they behave as reflective practitioners, as it is described in the works of Schon (1987).

Students' own expectations of their learning was the third component found to be significant in influencing faculty to change to learner-centered teaching. Non-traditional students, a large part of the students in community colleges, have differing expectations of education and learning than traditional students. Pitts, White, and Harrison (1999) reported that student expectations influenced faculty and teaching in various ways. They found that faculty were frustrated and dissatisfied with differences between faculty and student agendas and priorities for learning. Karabell (1998) explains that student expectations affect what they experience in class, which, in turn, affects faculty and teaching.

Age, the number of years of teaching experience at Oklahoma City Community College, and the total number of years of teaching experience were found to be significant background characteristics for one or more of the variables in this study that

were significant in influencing change to learner-centered teaching. All three background characteristics were, of course, related. The faculty who participated in this study were older (mean age of 51) and well experienced (mean of years of teaching experience was greater than 17 years). Fox (1997) reported that both the length of stay at a particular institution and the length of time in college teaching impacted change in teaching. Both Cranton (1998) and Kember and Gow (1994) state that the number of years of teaching experience is an important background characteristic in influencing change in teaching. Certainly experience influences teaching, but it is not clear from existing research how it might influence change in teaching.

Some research exists that provides insight into how years of teaching experience might be related to change in teaching. Amundsen, Gyrspeerdt and Moxness (1993) reported that although more experienced faculty are characterized as resisting change, many may change and create improved learning environments as a result of their experience. Based on research, Freedman et al. (1979) proposed five developmental stages in faculty careers. During the movement from the first to the fifth stage, faculty move from a simplistic perspective of their roles early in their careers toward a more complex view of what they do and how students learn. In stages four and five, faculty become more open to instructional diversity, are likely to stress synthesis in learning, and value student diversity and complexity. Similar to this view is Fuhrman and Grasha (1983) who report that beginning teachers focus on knowledge transmission and are more likely to use instructor-centered methods of teaching. Later in their careers, teachers are more likely to change and to explore learner-centered methods. Other researchers and experts also discuss the existence of stages in faculty careers that may lead to faculty

becoming more learner-centered as they become more experienced (Astin & Baldwin, 1991; Seldin, 1995). Davis (1993) noted that the existing research on the differences between beginning and experienced teachers in school settings shows that new teachers do not extract the same levels of meaning from what they see and experienced teachers understand better what happens in the classroom. He also proposed that the gap between less experienced and more experienced faculty is more pronounced in higher education because faculty do not have formal training in teaching.

Peers and administrators were not found to be significant influences on change to more learner-centered teaching. This is consistent with Grubb's (1999) recent research on teaching in community colleges that reported peers as having little influence on teaching improvement and change. He noted that, second to trial and error, faculty typically report that discussions with peers are a significant influence on change and improvement in teaching, but his study did not support peers as an influence. Others also report that faculty may contribute little to the improvement of each other's teaching (Cranton, 1998; Weimer, 1990). Wolverton and Richardson (1992) related that peers have a strong influence on the development of teaching style, but perhaps only rarely do they impact change in teaching. Kraft (2000) reported that one theme emerged in faculty workshops regularly held at his institution since 1986 – faculty do not find their own departments to be hospitable places to talk about improving or changing teaching. He attributed this situation to: (1) the competition with peers to be the best and to not bring up any difficulties one might have in classes or with students; (2) a reluctance to share feelings with peers in the department; (3) most discussions in departments relate to curricula; and (4) most departmental discussions about teaching are generally superficial

and not in depth sustained conversations. In the case of administrators' influence on change in teaching, Grubb (1999) reported that faculty equate administrative support for change and improvement in teaching with strong faculty development programs. Faculty, therefore, may be more likely to view faculty development as influencing change in teaching than administrative support or encouragement.

Over the last two decades, many educators have speculated that technology and distance education would change and improve teaching and learning. It was anticipated that this study would find that technology and teaching distance education are significant influences in changing to learner-centered teaching. These two variables may not influence change in teaching because faculty generally rely on their current teaching styles when using technology or teaching distance education (Berger, 1993; Frayer, 1999; Parisot, 1997; Wilson, 1994). Grubb (1999) found that technology and distance education did not impact change in teaching in community colleges. He stated that technology does not change or improve teaching because faculty use computers and technology to reinforce their own well-developed pedagogies. Additionally, he suggested that for technology and distance education to have a real impact on change to learner-centered teaching, colleges and faculty must develop a deeper understanding of pedagogical issues related to technology.

Research provides support for the findings of this study, but little research has been done on how or why faculty change to learner-centered teaching. There is information on the variables that influence the development of teaching style in younger and inexperienced faculty, including discipline and former teachers, but change in teaching has not been studied sufficiently by researchers in higher education. Theories

exist regarding how and why change in teaching may occur, but few studies have tested the theories or explored the reasons or variables that might influence faculty to make changes in their teaching styles. The issues involved in change of teaching style are complex and teaching has always been a difficult area to study. More research is needed to understand the process of change in teaching and the variables influencing change.

Discussion

The objective of this study was to identify variables that influence faculty to change from instructor-centered to learner-centered teaching. The study was successful in identifying two variables that influence change to learner-centered teaching, faculty development and the characteristics of students. More specifically, the components of those two variables that were found to be significant were on-campus faculty development programs, the number of underprepared students in classes, and nontraditional students. Background characteristics that were significant with one or more of the components were age of the faculty, teaching experience at the college studied, and total years of teaching experience. For the research question related to the interaction of significant variables, no significant paths for a causal model resulted from the data analysis.

Although a large portion of the full-time faculty of the community college studied reported that they were changing to more learner-centered teaching, that may not be the case. Numerous studies in higher education show that most faculty are not changing their teaching style and that they are continuing to use the same methods and strategies described as teacher-centered. Faculty may report becoming more learner-centered due to the fact that being learner-centered is a desirable attribute in teaching. It is also

possible that since change and innovation in teaching is a popular topic now in higher education, especially in community colleges, faculty who participated in this study may be contemplating change and therefore reported making changes. On the other hand, there is some evidence that experienced faculty, such as the participants in this study, may be moving toward more learner-centered teaching as a result of that experience.

The fact that participants in this study were generally an older more experienced faculty may have influenced the findings. Although faculty reported a change to more learner-centered teaching during the five-year time frame of the study, they might have actually made changes or began making changes in their teaching styles previous to that time. The influences or reasons for the reported change may not be as clear to them due to the length of time since they first initiated changes in teaching style.

Faculty in this study reported that on-campus faculty development programs influenced change to learner-centered teaching. Participating in faculty development programs can assist faculty in gaining knowledge about teaching, learning, students, and technology. It provides opportunities to reflect on teaching and to explore options for changes in teaching. In addition, colleges that provide for faculty development may also be demonstrating to faculty that they support and encourage change and innovation. Since Oklahoma City Community College emphasizes professional development of faculty, it is logical to expect that participants in this study would report that as an influence on change in teaching. The college has required an extended new faculty orientation each semester since it first was created in 1972. In addition, the college placed a greater emphasis on professional development three years previous to the study by requiring faculty to annually prepare a professional development plan for the

performance evaluation process. Part of the evaluation process includes an assessment of progress on the professional development plan for each faculty member. It is obvious to faculty that the college and the administration consider faculty development as a priority. Due to limited resources at the college for travel, it may be assumed that faculty were likely to participate in on-campus faculty development programs to accomplish their professional development goals during the three years previous to the study. Therefore, faculty at this institution would be expected to report on-campus faculty development programs as a greater influence on change in teaching than other types of faculty development.

Due to the "open door" policy of community colleges, faculty in these institutions typically experience serious teaching challenges related to the characteristics of the student population. Faculty may have large numbers of underprepared students in classes along with students who are academically well prepared for their courses. They may have large numbers of non-traditional students with differing expectations of education and learning. As a result, faculty may question their teaching style when large numbers of students fail to complete the course objectives successfully or withdraw from classes. Faculty may be more likely to reflect on teaching and search for more effective techniques to respond to these teaching challenges. Therefore, faculty teaching in community colleges may be more likely than faculty at other types of higher education institutions to report the influence of the characteristics of the student population on changes in their teaching style.

The most influential variable in influencing faculty to change to learner-centered teaching in community colleges may indeed be the characteristics of the student

population. A community college was used for the study and it is well known that community colleges have greater numbers of underprepared and non-traditional students than other types of higher education institutions. Student success or, more likely, lack of success is a concern of all faculty, but retaining students is and always has been a significant challenge in community colleges. Faculty come to community colleges expecting to practice teaching in the way they were taught as students, but they find the realities of the classroom to be quite different from their expectations. Similarly, faculty who use technology or teach distance education classes may expect to teach using the same approach used in the classroom, but find that students do not respond as expected. This disconnect between expectations and realities of teaching may provide the surprise, discomfort, or dissatisfaction that initiates reflection on teaching and subsequently change to learner-centered teaching.

It was anticipated that other variables in the study would be significantly related to change to learner-centered teaching, especially technology and distance education. Yet, for faculty, it may be the experiences of students with technology and with distance education classes that influence them to make changes in teaching. In other words, faculty may not view technology and distance education as direct influences on change in teaching. Instead, they may view the experiences of students in those classes as influences on change to learner-centered teaching.

In summary, the variables found to be significant in this study may provide the triggers that initiate reflection and change in teaching style. The characteristics of students, especially underprepared and non-traditional students, may provide the discomfort or dissatisfaction with teaching that influences faculty to begin the process of

reflection and change. Faculty development programs, especially on campus faculty development programs since they are more accessible than other types of faculty development, may supply the surprise that initiates reflection by providing faculty with new ideas and information about teaching and learning.

Implications for Practice

To accomplish change to learner-centered teaching, community colleges must establish a systematic, significant, and long-term commitment to changing and improving teaching. They must create effective and continuous faculty development programs. Community colleges cannot just call themselves teaching colleges and assume that, therefore, teaching on their campuses is effective and that good teaching necessarily leads to student learning. They cannot assume that faculty will recognize the need to change to learner-centered teaching on their own. They must assist faculty in confronting their traditional beliefs and assumptions about teaching. They must encourage, support, and provide incentives to faculty for changing to more learner-centered teaching. Community colleges especially must challenge faculty to be more responsive to the needs of diverse groups of students, including underprepared and nontraditional students.

There must be administrative support for change to learner-centered teaching, but faculty involvement and support of change in teaching are critical. Administrators may be important in supporting change, but it is the participation of faculty that determines the effectiveness of such initiatives. The participation and, more importantly, the leadership of faculty in planning and implementing continuous staff development focused on teaching improvement and change is crucial for success. Without faculty leadership in changing teaching, efforts to accomplish change will fail.

On-campus professional development programs for faculty may be particularly effective in accomplishing change to more learner-centered teaching. They are more accessible to most faculty than other types of development activities. In addition, Grubb (1999) implied in his study of community college teaching that faculty may be more influenced locally than nationally in terms of teaching innovation, improvement, and change.

A logical priority for faculty development programs may be a focus on younger less experienced faculty, particularly with higher education facing the retirement of a large number of faculty in the next few years. Graduate schools do not prepare students for higher education teaching; so colleges must prepare and educate new faculty. In addition, there is some evidence that more experienced faculty move toward learner-centered teaching simply as a result of that experience. Therefore, colleges that desire to have faculty move to more learner-centered teaching should direct efforts toward less experienced faculty.

Since new and less experienced faculty often have common concerns about their work environments, share a need to connect with other faculty, and desire to develop effective teaching skills, colleges can be especially effective in facilitating movement toward more learner-centered teaching by focusing on this group. Colleges should establish activities, programs, and practices that assist less experienced faculty in adjusting to the institution and allow them opportunities to address their concerns about students, teaching and learning. Creating an extended faculty orientation for younger less experienced faculty that provides opportunities for reflection on teaching, and information about teaching and learning theories, teaching strategies, techniques, and

methods may have substantial benefits for the college and the faculty. This may lead to both more student and more faculty success.

Opportunities to learn about the characteristics of the student population, particularly underprepared and non-traditional students, can be very valuable to all community college faculty. Teaching, as a profession, has not yet learned to respond well to underprepared and non-traditional students. Since community college students provide significant teaching challenges to faculty, these institutions must be especially attentive to assisting faculty, especially younger and less-experienced faculty, in learning about these students and teaching practices that are most effective with them.

Grubb offered the following comment related to student success and teaching in community colleges "...we remain convinced...that the high dropout rates in community colleges depend in part on the prevalence of traditional teaching for nontraditional students" (p.360). By facilitating change to more learner-centered teaching, community colleges may be more likely to retain the very students they exist, in part, to serve – non-traditional and underprepared students. The demographics of this country are changing and it is likely that the number of non-traditional and underprepared students will continue to increase. These students will seek to enter higher education, likely through community colleges. Community colleges must not just let them in the door, they must do whatever is needed to ensure the success of students in achieving their educational goals. Moving toward more learner-centered teaching will increase the chances that these students will gain the knowledge and skills needed to be successful in college, in the workplace, and in life.

Recommendations for Further Research

The results of this research were limited by the following: (1) only faculty at one community college were studied; (2) the faculty at that institution was an older and more experienced faculty; and (3) only a limited number of variables were included that may influence change in teaching. Further research is required to provide a clearer understanding of the variables that might influence faculty to change to learner-centered instruction.

To begin with, it is unclear whether faculty understood the difference between instructor-centered and learner-centered teaching. There were some comments from faculty on the questionnaire for this study about using both styles, depending on the class they teach. Other faculty stated in their comments that there were not really two separate approaches to teaching, only one. The research that has been done on teaching styles provides evidence that there are two styles and that faculty consistently use one style over the other. How faculty define and understand these two styles may impact how and why faculty make changes in teaching. Studies regarding faculty definitions and understanding of the two teaching styles may be an important step in further study in this area.

Reflection is an important part of the change process and needs to be included in further study regarding change in teaching. How and when do faculty engage in reflection? Are they more likely to engage in reflection early in their careers than later in their careers? What impact does burnout or stress play in reflection on teaching? What are the psychological factors involved in reflection on teaching? There are still many questions relating to faculty and the process of reflection on teaching in higher education.

Students may be the most important variable in influencing faculty to begin to make changes and improvements in teaching, especially in community colleges. More insight is needed into how the experiences of students influence faculty to change teaching styles. At what point do faculty make the decision to cope with underprepared or nontraditional students instead of trying to respond to their needs by improving or changing their teaching styles? How and at what point should colleges intervene to influence faculty to improve or change teaching to meet the needs of these students? The many questions related to how various groups of students influence faculty and teaching style should be an area for study.

Another important area to study is faculty development. What types of faculty development programs are most successful in influencing faculty to change teaching styles to a more learner-centered approach? Also, faculty are likely to regress to their traditional styles if they do not experience success when they attempt to make changes. How can colleges appropriately support faculty who are trying to make changes so they can ensure they are providing resources and assistance at critical times in the change process? Research regarding faculty who have attempted change and not been successful might provide some answers about what assistance or resources may have been helpful in avoiding a relapse to traditional instructor-centered teaching.

There are other variables that may also influence changes in teaching that should be included in future studies. Comments from faculty participating in this study mentioned assessment as an influence. Certainly assessment is a major issue in higher education at this time. The role assessment may play in influencing faculty to make changes in teaching is unknown.

Perhaps a time period greater than five years would result in more information about what influenced more experienced faculty in making changes in teaching. Grubb (1999) states that faculty are not in the habit of talking about or thinking about teaching and influences on teaching. That may be particularly true of experienced faculty. They may not have given thought to what influenced their changes in their teaching styles in many years. Qualitative methods may be particularly effective in identifying the influences on change in teaching for more experienced faculty.

Summary

This study found the following variables to be significant in influencing faculty to change their teaching styles from an instructor-centered to a more learner-centered style: (1) faculty development, specifically on-campus faculty development programs and (2) the characteristics of the student population, specifically the number of underprepared students in classes and nontraditional students. This study is a first step in beginning to understand the influences on change to learner-centered teaching. Due to the fact that change to learner-centered teaching is a complex issue involving psychological issues related to faculty and the process of change and the many variables that may influence faculty to change teaching styles, there are many questions yet to be answered.

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APPENDICES

APPENDIX A

Dear Oklahoma City Community College Faculty Member,

I am conducting a study entitled "Change from an Instructor-Centered to a Learner-Centered Instructional Strategy: A Study of Faculty at a Community College " as part of a graduate program in the College of Education at the University of Oklahoma-Norman campus. The purpose of this study is to determine the factors that may influence faculty to make changes in their teaching style. Teaching style and student learning are currently issues of great interest and attention in higher education. The information you provide in this questionnaire can assist educators in learning more about faculty and change in teaching style.

Your participation is very important in gaining the information required to complete the study. The questionnaire will require **ten minutes or less** of your time. The identity of all participants will remain anonymous. There is no way you can be identified through the questionnaire. Your participation is voluntary and there will be no penalty or risk whether you decide to participate or not.

To participate, please complete the attached questionnaire and return it in the envelope provided. All questionnaires will be returned to Dr. John Barker, Director of Research at Oklahoma City Community College.

If you have questions about this research study, please contact me at (405) 682-7584 or (405) 485-8713. If you have inquiries about rights as a research participant, please contact the Office of Research Administration at the University of Oklahoma-Norman campus, (405) 325-4757.

Thank you for your time and consideration of this request.

Charlotte French
Graduate Student
University of Oklahoma

FACULTY SURVEY

The purpose of this survey is to determine factors that may influence faculty to make changes in their teaching styles. It is estimated that it will take you 10 MINUTES OR LESS to answer these questions. All responses will remain anonymous. Thank you for your time.

1. What is your age?

   Age _____

2. What is your gender?

   Female ☐
   Male ☐

3. What is your teaching field?

   Arts ☐
   Humanities ☐
   Business ☐
   Health ☐
   Technology ☐
   Social Science ☐
   Science ☐
   Math ☐

4. How many years have you been teaching?

   At OKCCC _____
   Total _____

5. What is the highest degree you hold?

   Associate ☐
   Bachelor's ☐
   Master's ☐
   Doctorate ☐
   Professional (J.D., M.D., etc.) ☐

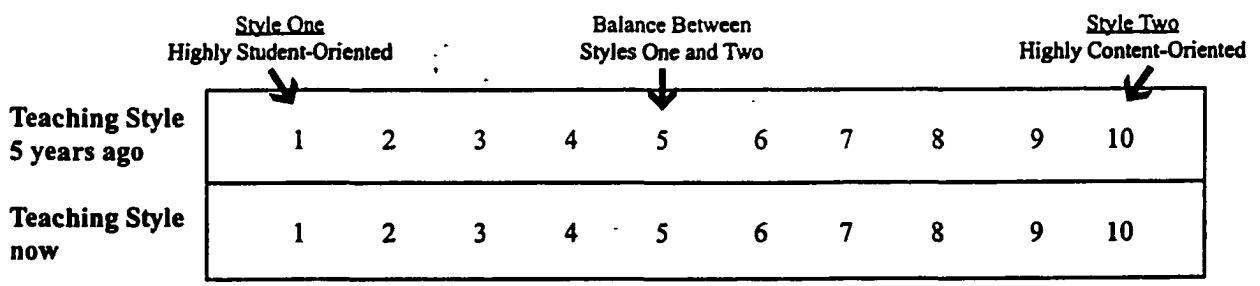
6. The following scale represents a continuum between two teaching styles. Style One (Student-Oriented Style) is at the left end of the scale and Style Two (Content-Oriented Style) is at the right end of the scale. Definitions of both styles are provided below. **Please circle one number that best describes your teaching style 5 years ago and one number that best describes your teaching style now .**

Style One

Faculty serve as resource and learning facilitator. Teaching methods vary according to student learning styles and course objectives. Evaluation methods vary, but focus on student understanding of the content. Students cooperate and collaborate as part of the learning activities.

Style Two

Faculty serve as content providers. Teaching methods are lecture, discussion, and demonstrations. Tests emphasize recall of factual and memorized information. Students attend class and learn mostly on their own.



For the following statements, please indicate on a scale of one to five how much each factor influenced the change, if any, you made in your teaching style or approach in the last five years. "1" indicates no influence and "5" indicates high influence. If the statement is not applicable to your situation, please leave it blank. If you have not indicated any change in your teaching style in question 6, please go to question 35.

	No Influence 1	2	3	4	High Influence 5
7. Participation in campus faculty development programs	☐	☐	☐	☐	☐
8. Involvement in a campus center for teaching and learning	☐	☐	☐	☐	☐
9. Attendance at professional conferences or meetings focused on teaching and learning	☐	☐	☐	☐	☐
10. Perceived financial rewards for teaching excellence or innovation	☐	☐	☐	☐	☐
11. Actual financial rewards for teaching excellence or innovation	☐	☐	☐	☐	☐
12. Institutional recognition for teaching excellence or innovation	☐	☐	☐	☐	☐
13. Faculty grants or funds to develop teaching excellence or innovation	☐	☐	☐	☐	☐
14. Administrative (deans, directors, vice-presidents, and president) support or encouragement for change or innovation in teaching	☐	☐	☐	☐	☐
15. Peers or colleagues in your department	☐	☐	☐	☐	☐
16. Faculty roundtable discussions	☐	☐	☐	☐	☐
17. Informal discussion with peers outside your department	☐	☐	☐	☐	☐
18. The number of underprepared students in your classes	☐	☐	☐	☐	☐
19. Students' own expectations of their learning	☐	☐	☐	☐	☐
20. Student learning style preferences	☐	☐	☐	☐	☐
21. Student feedback on instruction	☐	☐	☐	☐	☐
22. Institutional curriculum change	☐	☐	☐	☐	☐
23. Departmental curriculum change	☐	☐	☐	☐	☐
24. Disciplinary curriculum change	☐	☐	☐	☐	☐
25. Use of technology in the classroom	☐	☐	☐	☐	☐
26. Experience teaching live instructional television classes	☐	☐	☐	☐	☐
27. Experience teaching telecourses	☐	☐	☐	☐	☐
28. Experience teaching online classes	☐	☐	☐	☐	☐

If there are other influences or changes you have made in your teaching style in the last five years, please list them below or use the back of this sheet:

	No Influence 1	2	3	4	High Influence 5
29. _____	☐	☐	☐	☐	☐
30. _____	☐	☐	☐	☐	☐
31. _____	☐	☐	☐	☐	☐
32. _____	☐	☐	☐	☐	☐

The following questions contain things that instructors might do. For each item, please respond to the way you most frequently practice the action described, according to the scale provided.

	Always	Almost Always	Often	Seldom	Almost Never	Never
33. I adjust my instructional strategies based on feedback from students.	0	1	2	3	4	5
34. I provide knowledge rather than serve as a resource person to students.	0	1	2	3	4	5

35. Please use the space below or on the back of this sheet to make additional comments or explanations.

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

Thank you for your cooperation.

Please return survey in the enclosed envelope to Dr. John Barker, Director of Research

APPENDIX B

The University of Oklahoma

OFFICE OF RESEARCH ADMINISTRATION

November 14, 2000

Ms. Charlotte French
PO Box 1526
Blanchard, OK 73010

Dear Ms. French:

Your research application, "Selected Factors Associated with Change to Learner-Centered Teaching," has been reviewed according to the policies of the Institutional Review Board chaired by Dr. E. Laurette Taylor and found to be exempt from the requirements for full board review. Your project is approved under the regulations of the University of Oklahoma - Norman Campus Policies and Procedures for the Protection of Human Subjects in Research Activities.

Should you wish to deviate from the described protocol, you must notify me and obtain prior approval from the Board for the changes. If the research is to extend beyond 12 months, you must contact this office, in writing, noting any changes or revisions in the protocol and/or informed consent form, and request an extension of this ruling.

If you have any questions, please contact me.

Sincerely yours,

Susan Wyatt Sedwick

Susan Wyatt Sedwick, Ph.D.
Administrative Officer
Institutional Review Board

SWS:pw
FY01-108

cc: Dr. E. Laurette Taylor, Chair, Institutional Review Board
Dr. David Tan, Education

1000 Asp Avenue, Suite 314, Norman, Oklahoma 73019-0430 PHONE: (405) 325-4757 FAX: (405) 325-6029

MEMORANDUM

TO: Ms. Charlotte French, Executive Director of Enrollment Management

FROM: Dr. John Barker, Director of Research

DATE: October 3, 2000

SUBJECT: Approval for Research

This memorandum grants permission for data collection at Oklahoma City Community College according to the specifications outlined in your dissertation prospectus, Selected Factors Associated with Change to Learner-Centered Teaching. Please let me know if you have any questions.