CHAPTER ONE:

INTRODUCTION

Distance learning is defined as the use of technology to bridge a gap in physical distance between a teacher and a student (Matthews, 1999). Distance learning is not a new concept in higher education. Since the development of the postal service in the 19th century, colleges have provided distance education to students across the country (IHEP, 1999).

The beginnings of distance education can be traced back to 1840, when Sir Issac Pitman thought of a way to deliver instruction to an infinite audience. His idea was to offer correspondence courses by mail. The concept was successful and within a few decades extensive correspondence programs were available in the United Kingdom, Germany, the United States, and Japan (Curran, 1997). By the 1900s, the first department of correspondence teaching was established at the University of Chicago and by 1911 the University of Queensland in Australia had developed a Department of External Studies (Matthews, 1999).

In 1969, the United Kingdom's Open University (OU) was founded. This marked another phase in distance learning, as OU used a mixed-media approach to teaching (Matthews, 1999). The OU sent learning materials to students by mail. The materials were in text format, as well as in audio and video formats, and the courses were supplemented with broadcasts on radio and television. OU students were assigned tutors who assisted them over the phone and through in-group sessions (D.N., 1997).

After the opening of OU in 1969, there was tremendous growth in distance education. By 1994, OU was teaching more than 200,000 students. There are now OU

offices in Austria, Belgium, France, Germany, Greece, Italy, Luxembourg, the Netherlands, Portugal, Ireland, Spain and Switzerland (Peck 1995).

The arrival of the World Wide Web (WWW) further promoted the growth of distance education (Lichtenberg, 2001). In 1995, 33% of higher education institutions in the U.S offered distance education courses and by 1998 that percentage had grown to 44%. The Internet was the primary medium for delivering those programs, constituting 66% of the delivery methods in 1998 (Borland, Jr., Lockhart, & Howard, 2000).

Between 1995 and 1998, the number of distance courses doubled, from 25,730 to 52,270 (Dyrud, 2000). As the number of courses available online grew, so did the number of students taking advantage of them. Enrollment in such courses grew from 300, 000 in the mid-1980s to 1.6 million in 1998. In the wake of this growth, questions are being asked about the quality of distance teaching and learning and how to assess distance education in general (Borland Jr., Lockhart, & Howard, 2000).

A significant amount of research has been conducted on the quality of distance education (IHEP, 1999). Most of the research on quality relates to student perceptions and student outcomes. This literature can be conceptualized in three groups.

The first group focuses on student attitudes toward learning (IHEP, 1999; Goldsmith, 2001). Students' attitudes toward distance learning are generally favorable. One study examined the perceptions and attitudes of students toward computer-mediated learning and courses broadcast over a local television channel. The students chose distance education because of the flexible schedule this form of learning offers. They preferred not to commute to campus to take a class and appreciated not having a specific time block during which they had to be in class (IHEP, 1999).

Another study, conducted in the Fall 2000 semester, investigated students'
attitudes to online instruction. This study examined responses from 400 students enrolled
in 72 online courses offered by 15 different institutions. In general, students responded
positively. They cited flexibility of time and place as the major reason for taking an
online course. They also stated that good communication and interaction were reasons
for taking the course. Many students felt they could be more open and honest online and
felt freer to disagree with others than they would be in a traditional classroom. Over 90%
of these students stated they would take another online course and would recommend the
same to others (Goldsmith, 2001).

The second group of studies examines student satisfaction with distance
education. Overall, students participating in distance education are satisfied with their
learning experience. In the spring of 1999, 18 public community colleges participated in
a study to find out if students were satisfied with the on-line courses they were taking.
Five hundred fifty-five students enrolled in 113 different online courses responded to a
34-item survey designed for the study. The questionnaire examined course
administration, course instruction, access, and delivery format. A majority of participants
were satisfied with all of these areas. Eighty-four percent of respondents said they were
satisfied or very satisfied with the course they were taking. Eighty-six percent would
recommend their course to other students and 90% would take another online course
(Bower & Kamata, 2000).

In another study, graduate nursing students were asked about their satisfaction
regarding their distance education course. The majority of respondents said they had a
positive experience and requested more distance learning opportunities (IHEP, 1999).

In additional studies, evaluations indicate that satisfaction levels in distance education classes are at least equal to those obtained for traditional classroom offerings (Jennings, Siegel, & Conklin, 1995; Kelley, 1993; Potts & Hagan, 2000).

In the third area of research, student outcomes, most studies suggest that students in distance education classes fare just as well as their counterparts in traditional classrooms. One study examined whether students' writing skills improved while taking online English courses. The two English classes were monitored over the course of a semester. Writing samples of students were examined at the end of the semester to see if there were improvements. Students' writing skills dramatically improved over the semester and this improvement was attributed, in part, to the online class discussion and feedback from peers. In one of the courses, the students were writing up to 50 times as much as the students in comparable on-campus courses (Mulligan & Geary, 1999).

Numerous studies, such as the one above, compare traditional and distance education student outcomes. There is research that suggests that such comparisons are flawed. The comparison of distance courses to traditional courses is called the media comparison approach. This approach suggests that comparing one medium to another is ineffective because there is little consideration given to students' attributes and characteristics, to learner needs, or to psychological learning theories (Lockee, Moore, & Burton, 2001). What is important to measure is whether students learn and not compare between the two mediums.

The literature on distance learning also includes a wealth of advice on what should be included in the design of on-line classes. Some authors have identified principles of learning that could be combined to create a conceptual framework for

assessing distance teaching and learning (Borland, Jr., Lockhart, & Howard, 2000).

Others have described types of interaction in distance education (Moore, 1989) or have

created instructional models (Chickering & Gamson, 1987).

In 1989, Moore proposed three types of interaction in distance education that are

viewed as good principles of distance education practice: a) learner-content, b) learner-

instructor, and c) learner-learner. A fourth type, learner-interface (technology)

interaction, was later offered by Hillman, Willis, and Gunawardena (1994). Interaction,

though a significant element to promoting learning, is frequently reported as the missing

component in distance education (Wagner, 1997).

Chickering and Gamson (1987) developed a conceptual model for planning and

assessing education. They assembled findings from research on the undergraduate

experience and published *Seven Principles for Good Practices in Undergraduate*

Education. Good teaching practices:

1. Encourage contact between students and faculty;

2. Develop reciprocity and cooperation among students;

3. Encourage active learning;

4. Include prompt feedback;

5. Emphasize time on task;

6. Communicate high expectations, and;

7. Respect diverse talents and ways of learning (Chickering & Gamson, 1987).

Chickering and Gamson developed an inventory, based on these seven principles,

to help faculty members identify methods and activities they might include in traditional

classrooms. In one study, Borland, Jr., Lockhart, & Howard (2000) used the four types of

interactions in distance education in combination with these seven principles to develop an instrument which gathers faculty and student perspectives on the same course. The instrument asked questions about how students communicated with each other, how feedback was provided to the students, and how the teachers communicated their expectations.

Since the seven principles were created in 1987, there have been significant changes in higher education due to the growth of technology. After the original principles were written, Chickering and Ehrmann (2001) elaborated on the seven principles by writing an article that described some of the most cost-effective and appropriate ways to use computers and other technologies to advance learning. For example, to assist with Principle 2 (Good Practice Develops Reciprocity and Cooperation among Students) an instructor can put students in online learning teams. Using "hidden text" options when providing feedback on word processing assignments can help instructors in providing more prompt feedback (Principle 4).

In one study, the seven principles were incorporated into a web-based syllabus for a statistics course (Chizmar & Walbert, 1999). This study provided further examples of how instructors might incorporate the principles into an online course. One method used by the researchers addressed the sixth principle of the model: communicating high expectations. This was accomplished through the use of the rubric. The rubric is an explicit statement of the criteria and standards to be used to evaluate student performance. It is "assignment specific –for each performance the assessor builds a unique set of criteria—and identifies factors or 'traits' that will count for the scoring and then builds a scale for scoring the student's performance with each trait" (Chizmar &

Walbert, 1999, p. 253). This study is significant because it shows that the seven principles can be successfully incorporated into online classes.

In summary, distance education has changed dramatically since its advent in the 19th century. It has gone from solely correspondence courses to a mix of correspondence and other multimedia classes, to online courses offered through the WWW. Since the inception of the WWW, millions of students have engaged in online learning and their numbers continue to grow. Because of this growth, there is a need to evaluate the quality of distance education courses.

There is a great deal of research on distance education classes, including students' attitudes toward distance learning, student satisfaction with distance learning, and outcomes of students in distance learning classes. There is also a wealth of research on the instructional design of distance education classes. A missing element in this body of research appears to be the views of instructors who design distance education courses. There is still a need to assess whether instructors are aware of good teaching practices with respect to distance learning and whether they are implementing those practices into their online classes. This study sought to address that gap in the literature.

Purpose of the Study

The purpose of this study was to assess whether instructors of distance learning courses are using Chickering and Gamson's principles for good practice in teaching. For purposes of this study, distance education was limited to any course offered via the Internet.

Using current research on the seven principles (Chickering & Gamson, 1987; Chickering & Ehrmann, 2001) the researcher developed a survey to explore whether the instructors were incorporating the practices into their online classes. Furthermore, the researcher examined if there were differences by gender and level of teaching experience.

Research Questions

This study was designed to explore the following research questions:

1. Are instructors of online courses incorporating Chickering and Gamson's (1987) seven principles into their courses?

2. Are there differences in the application of the principles for good practice by gender?

3. Are there differences in the application of the principles for good practice by the level of on-line teaching experience (beginner, experienced, professional)?

4. Are there differences in the application of the principles for good practice by discipline?

Significance of the Study

The present study had significance for future practice, research and policy. The results of this study could be used by several groups of practitioners. One group that might benefit is instructors of on-line courses. The study provided faculty with data on instructional design methods. The findings might assist distance-learning instructors in improving the design of their courses.

An additional constituency that might use the results of this study is academic planning officers on campus. The findings offered planning officers with a way to assess

faculty knowledge of online instructional design. They might use the data to assess the instructional design of their own on-line offerings.

Distance learners might also benefit from this study. By understanding good practices with respect to course design, distance learners may make better judgments as to the quality of instruction they are receiving.

As a result of studying online teaching practices, additional studies might be conducted. One such study might involve evaluating the instructors in on-line degree programs. The increasing demand for on-line courses is leading to the increased demand for on-line programs. The present study examined only instructors of individual classes. Assessing the knowledge of all instructors within a single on-line degree program would expand the knowledge available on distance learning in general.

Another study might be conducted on distance education courses that use more than one type of technology. There are currently numerous studies on distance education courses, but almost all of them focus on one technology and compare its effectiveness to the traditional classroom. Knowing how effective multiple technologies are, such as courses that use both the Internet and two-way video, can assist faculty in the design of distance education courses.

The current study focused on the knowledge of good online teaching practices among instructors as rated by an objective survey. A study on instructors' perceptions of quality employing qualitative techniques might be conducted as well. Supplementing the quantitative data resulting from this study with deeper, richer data from a qualitative study might lead to a fuller understanding of teaching practices among online instructors.

Finally, there are implications for policy as a result of studying quality in distance education. This study provided policymakers at different levels with information about distance learning.

Campus academic policymakers could use the results to determine the quality of instruction among distance education classes. Knowing whether distance-learning instructors are aware of instructional methods may determine whether an institution needs to implement professional development programs in the area of distance education. Additionally, the findings may inform policymakers about how to assess distance education courses on each campus.

Distance education policymakers could also use the results to examine assessment policy. Currently, there is a wealth of information on what should go into designing a distance education course, but there is little available on whether instructors are aware of this information. The results of this study might be used as a tool to assess instructors' knowledge of sound online instructional methods.

On another level, state policymakers could use the results to examine the state role in distance education. Knowing how aware instructors are when designing their courses may impact how the state considers funds for development.

<center>Delimitations</center>

As with all research projects, there were several initial delimitations to this study. First, it was limited by defining distance education as on-line coursework only. Distance education classes are being delivered by correspondence, video interaction, and video and audio interaction. By examining only courses that were offered on-line, the results of the present study may have been influenced in some way.

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A second delimitation related to the sample. A convenience sample of instructors was used. It is possible that this sample did not reflect online instructors in general. If so, the results might have been skewed.

Another delimitation to the study was the way in which the survey was constructed. The researcher used Chickering and Gamson's (1987) criteria on good practices and translated these practices into survey items. It is possible the survey created by the researcher did not include all measures associated with good instructional practices. If this occurred, the results might have been influenced.

Despite these delimitations, the study was worthwhile. Understanding the scope of knowledge by instructors of distance education courses can assist higher education administrators in several areas including curriculum assessment and development.

Organization of the Study

This study is organized around five chapters. Chapter One introduced the topic, the purpose of the study, the research questions, and the significance of the study. Chapter Two reviews the literature relevant to the study. Chapter Three describes the methodology employed in the study, including sampling techniques and data collection and analysis procedures. Results of the study are presented in Chapter Four and Chapter Five discusses those results and their implications for future practice and research.

CHAPTER TWO:

LITERATURE REVIEW

In order to explore the issue of teaching practices and differences in usage of distance learning models, it was necessary to examine several areas of literature. First, I examined the literature on good teaching practices in general. Next, I examined teaching differences by gender and also by level of experience. Last, I investigated the research on distance learning models. This chapter is organized around these three major topics and the subsections associated with each topic.

Good Teaching Practice

There are several core standards that describe the essential characteristics of teaching. Most of these standards focus on K-12 teaching. There is, however, one model that is relevant regardless of grade level. This model of standards is applicable to any subject area, grade level or level of students being taught and was developed by the Interstate New Teacher Assessment and Support Consortium (INTASC). INTASC was created in 1987 as a program of the Council of Chief State School Officers and it is a multi-state effort to develop model-licensing standards for teachers. INTASC is made up of both state and national education agencies. A discussion of the core standards follows (Ambach, 1996).

One standard relates to understanding the central concepts of the teacher's chosen discipline. The teacher must fully understand the discipline so he/she may create meaningful learning experiences for the students. Related to this, the teacher must also have an understanding of student development. Understanding how students learn and

develop helps the teacher to provide support to a student's personal, social, and intellectual growth (Ambach, 1996).

Another core standard describes how teachers need to understand that diverse learning opportunities are essential. All students have a different approach to learning and the teacher has a responsibility to provide instructional opportunities that are adapted to diverse learners. Additionally, the next standard states that teachers should use a variety of strategies to help students develop critical thinking, problem solving, and performance skills (Ambach, 1996).

The use of individual and group motivation is another core standard for teachers. Teachers should create a learning environment that fosters positive social interaction, active learning, and self-motivation. Also, teachers should have knowledge of verbal, nonverbal, and media communications so that they can provide inquiry, collaboration, and interaction in the classroom (Ambach, 1996).

Teachers should base instructional plans on their knowledge of several things: their own knowledge of the subject, the students, the community, and the curricular goals. The teacher should also understand and use assessment strategies, either formal or informal, to evaluate student development (Ambach, 1996).

A teacher should not only evaluate the development of the students, but also of him/herself. The teachers' choices and actions affect others and they should be aware of that. Seeking professional development opportunities and cultivating relationships with others (colleagues, and the community) is also important in providing support to students (Ambach, 1996).

These core standards parallel many of the principles in the Chickering and Gamsom model, which is the primary model used for purposes of this study. A full description of the Chickering and Gamson model is discussed later in this chapter.

Although there is an expectation that teachers will possess certain characteristics as discussed in this section, it is important to realize that all teachers may not meet those characteristics. Additionally, teachers who may possess the same characteristics may display them differently. For example, research indicates that there are differences in teaching by gender.

Teaching Differences by Gender

Undergraduate education is becoming increasingly valuable and necessary to success in life. As a result, there is a growing interest in the characteristics of college and university classrooms that encourage student success (Belenky, Clinchy, Goldberger & Tarule, 1986; Gose, 1995; Maher & Tetreault, 1994). One area of interest is the role of male and female professors in student success (Maher & Tetrault, 1994).

Student Perceptions of Teaching Differences

Previous research indicates that students might feel closer to same-gender professors. Students studying social work have to complete a "field instruction" where they practice social work outside the classroom under the guidance of a supervisor. Those students who work with a same-gender supervisor report more positive ratings of the instructor than the students who work with an opposite-gender instructor (Behling, Curtis, & Foster, 1982).

Additionally, students, both male and female, generally feel closer to their female professors than their male professors. Students perceive female professors as engaging in

more personalized interaction than male professors (Crawford & MacLeod, 1990). Female professors also serve as role models for female students and as a result, there is a positive correlation between the number of female achievers and the number of female faculty at a school (Rice, 1991).

Sears and Hennessey (1996) further explored the issue of differences in teaching practices by sex in a study that examined perceptions among students from four different institutions of learning. The participants were 62 male and 139 female undergraduate students from Smith College, Wheaton College, Amherst College, and the University of Massachusetts at Amherst. The participants were surveyed at the beginning of the Spring 1995 semester during their regular class times. They were asked to give their impressions of how close they felt to their professors. Overall, the students felt closer to their female professors.

Factors that Influence Teaching Differences

There are numerous reasons students might indicate a greater level of closeness to their female professors. For example, female professors might have more amiable personalities than male professors. It has been speculated that females may create more feelings of "warmth" than males (Crosby & Reinardy, 1993). This expectation seems to reflect generalized societal stereotypes about appropriate behaviors for the sexes (Nadler & Nadler, 2000). For example, Bennett (1982) found that both male and female students expected female faculty to be more supportive and personal with students. In a more recent study, female instructors were perceived as expressing more empathic concern in their interactions with students than male instructors (Nadler & Nadler, 2000).

A second explanation for differences in teaching effectiveness by sex may be that male and female professors have different teaching styles (Crawford & MacLeod, 1990). This also relates to females creating more "warmth." Both male and female students perceive female professors as engaging in more personal interactions (Crawford & MacLeod, 1990).

A third explanation might be that female professors are more likely to teach smaller classes, which would help in nurturing close relationships. One study found that initially both male and female students rate female professors as promoting more participatory classrooms. This result was reported by students in smaller classroom settings, however. When the class size was held constant, the effect of perceptions of classroom climate disappeared (Constantinople, Cornelius, & Gray, 1998).

A fourth reason that female professors may rate higher in levels of closeness to students may be that female professors are more likely to teach in a student's major field or in more popular disciplines (Sears & Hennessey, 1996). A final reason that might explain differences in teaching effectiveness by sex relates to gender roles. It is possible that female professors might be held to a more traditional view of the teacher as a mother-like role (Sears & Hennessey, 1996).

These studies show that there are perceived teaching differences by gender. In addition to differences by gender, there is also research that indicates there are differences by level of teaching experiences. Specifically, there is a wealth of research available on the differences between novice and expert teachers.

Teaching Differences by Level of Experience

Most of the research on teaching differences by level of experience also comes from K-12 teaching research. Although most of research comes from K-12, it is still relevant to the current study because teaching differences by experience are examined.

Research in cognitive psychology indicates that there are differences in the ways expert and novice performers represent information from memory. Experts in all fields are better able to recall relevant information, recognize meaningful situations and patterns, and organize their existing knowledge than novices. Research comparing expert and novice teachers suggests that characteristics of expertise apply to classroom teaching also (Byra & Sherman, 1993).

There have been numerous profiles written about both expert and novice teachers and most researchers agree on their common traits. One characteristic of expert teachers is that they excel in the content of their own domain and see key patterns of meaning in the content of that domain. They also have the ability to make quick (and accurate) inferences and decisions when performing the skills of their domain. Another characteristic of the expert teacher is the use of a broad set of principle-driven heuristics to solve problems. They spend a great deal of time analyzing problems. Expert teachers also have a high degree of meta-cognitive and self-monitoring skills. Additionally, expert teachers have the ability to change tracks quickly as they sense the need to do so and can negotiate relationships with individual students (Tomlinson, Callahan, Tomchin, Eiss, Imbeau, & Landrum, 1997, p.270).

Novice teachers, by contrast, lack rich or even adequate content understanding in their domains and therefore, teach facts rather than conceptual understanding.

Additionally, they generally lack the skills required to manage classrooms, and have narrow understandings of student differences. Novice teachers also operate from fixed views of schools, which are derived in large part from their own experiences as students. They practice a random selection of solutions to problems and identify and conceive classroom problems in a shallow fashion. Novice teachers, unlike expert teachers, use a narrow range of instructional strategies that often times does not match the nature of the individual student or subject. Furthermore, novice teachers tend to become more authoritarian and conservative as they face classroom complexities (Tomlinson et al., 1997, p.271).

Numerous other studies have been conducted which suggest differences in teaching style based on level of experience. One such study investigated the decision-making tendencies of novice and more experienced pre-service physical education teachers (Byra & Sherman, 1993). The study involved monitoring the teaching strategies of the pre-service teachers (PTs), and their ability to deal with teaching environments. The results showed that the more experienced PTs planned in greater detail and were better able to make adjustments to their teaching plans based on the progress of their class. The less experienced were not as easily able to stray from their teaching plans because they had fewer alternative teaching routines in their repertoire (Byra & Sherman, 1993).

Another study revealed that novice (student) teachers knew what should be included in their lesson plans and classroom activities, but still failed to include them. In this recent study (Campbell & Evans, 2000), a sample of 309 lesson units from 65 PTs attending a large mid-western state university was chosen for critical review. Lesson unit

guidelines required pre-service teachers to develop a methodology to evaluate their own instructional effectiveness. Of the 309 lesson plans reviewed, 59 neither identified nor contained any method(s) of assessment. Of the 59 lesson plans, 2 plans explicitly stated that student achievement for those particular lesson plans would not be assessed. The remaining 250 lesson plans indicated an intention to formally assess student achievement but only 82 included how this would be accomplished.

Evaluating the research on teaching differences by experience is important to the current study. Understanding that a knowledge base effects one's teaching style/ability is important when put into the context of distance learning. Instructors make their instructional decisions based on their level of experience. The next area of research explores distance learning models and how they have been used in course design.

Distance Learning Models

The literature on distance learning suggests that there are several approaches one might take in the design of a distance education course. Two approaches are based on philosophical assumptions: Objectivism and Constructivism. Additionally, there is a 4-square model based on four types of technologies that support the group process: (1) same time/same place, (2) different time/different place, (3) same time/different place, and (4) same place/different time. These four categories are used for describing technologies that currently support distance teaching and learning. Finally, there are instructional models originally created for traditional classroom settings that have been expanded upon to fit distance education courses. One of the better-known models is Chickering and Gamson's (1987) *Seven Principles for Good Practice in Undergraduate*

Education. Before discussing these various models, the construct of interaction is discussed as it relates to distance education.

Interaction

Interaction is one of the most important components of any learning experience and it has been identified as a major construct in distance education research (Vrasidas, 2000). Interaction can be defined as a behavior where individuals and groups act upon each other. A main characteristic of interaction is reciprocity in actions and responses. It can take any form: verbal or nonverbal, formal or casual, and conscious or unconscious (Vrasidas, 2000). While interaction is a significant element to promoting learning, it is frequently reported as the missing component in distance education (Wagner, 1997).

In 1989, Moore proposed that there are three types of interaction in distance education. These interactions are viewed as good principles of distance education practice. They are: a) learner-content, b) learner-instructor, and c learner-learner.

Learner-content interaction is the fundamental form of interaction, as it is what all education is based on. Learning occurs when learners interact with some content, which leads to a change in behavior, or the creation or modification of ideas. Content can be found in books, or can be objects, ideas, computer programs, or websites, among other things (Moore, 1989).

Learner-instructor interaction refers to any interaction between the student and the instructor. This can include the teacher delivering information, lecturing, encouraging the learner, or providing feedback. It can also include the learner interacting with the teacher by asking questions, completing assignments, or talking with the teacher (Moore, 1989).

Learner-learner interaction involves learners collaborating with each other. They might do this by working together on projects, through discussions, or interacting on other topics that relate to the course. Hillman, Willis, and Gunawardena (1994) argued that previous research on interaction failed to acknowledge that in distance education, all interaction is mediated via a medium. They proposed a fourth kind of interaction, learner-interface (Moore, 1989).

Learner-interface interaction states that every medium uses a different symbols system to convey a message (Vrasidas, 2000). The message conveyed by a medium is affected by the attributes of the medium and the learners' skills with technology have an influence on the success of their distance education.*Objectivism*

The first philosophical approach to distance learning involves objectivism. Most traditional approaches to teaching and learning share the same philosophical assumptions that are fundamental in objectivism (Vrasidas, 2000). There are several major assumptions to objectivism. One of those is that there is a real world consisting of entities structured according to their properties and relations. Another assumption is that the real world is structured so it can be modeled. Additionally, symbols represent reality and are only meaningful if they correspond to reality. Human minds process the symbols so that they mirror nature. Finally, human thought is symbol-manipulation and the meaning of the world exists objectively, independent of the human mind (Vrasidas, 2000).

The objectivist instructor believes that there is only one reality. There is only one correct way of understanding any given topic. Learning is basically a change in behavior or thought. As a result, any instruction should be designed to transfer the knowledge to the learner's mind. Tyler conceived a curriculum development model in 1949 (Vrasias,

2000). This model consisted of four major steps that are fixed and must be followed in the correct sequence. The first step is to identify the objectives of instruction. Next, select the useful learning experience. The third step is to organize the experience and the last step is to evaluate learning. Distance educators who follow this model will make sure their objectives are very clear and learning will only be measured by observable behavior.

If an instructor subscribes to the objectivist view, then he or she does not view the learner's interaction with peers as being a critical component to learning. From the four types of interaction, the two that are most important to the objectivist distance educator are learner-teacher and learner-content. When designing a distance education course, then, the instructor will structure the course so there is more learner-content and learner-teacher interaction (Vrasias, 2000). To promote learner-content interaction, the teacher will assign readings and papers, and ask questions specific to the content of the course. The teacher asking or answering questions cultivates the learner-teacher interaction. The teacher might do this by using electronic messages, inviting students to a real-time chat, and/or by providing feedback to the students. Ultimately, the teacher is the authority figure and decides on the interactions that will occur (Vrasias, 2000). Evaluation of student learning is based on specific criteria, such as how students perform on a test. They are not evaluated on how they rank among their peers.

Constructivism

The basic premise behind constructivism, the second philosophical approach to distance learning, is that knowledge cannot exist without the learner because the learner creates knowledge. There are five major assumptions of constructivism. One assumption is that there is a real world and it sets boundaries to what we can experience. A second

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assumption is that the world is created in the mind through interaction and the world is based on our interpretation of events. Another assumption is that the mind creates symbols by interpreting the world. The last two assumptions are that human thought is imaginative and meaning is a result of the knower's experiences and understanding (Vrasidas, 2000).

Unlike the objectivist, the constructivist does not identify clearly distinct stages when it comes to distance course design. The three major phases of course development are: (a) analysis, (b) design, and (c) evaluation. These stages all overlap and are ongoing. In a course developed by a constructionist, the learners have great control over their own learning and are given the opportunity to negotiate the content of the course, the assignments, and deadlines by which work must be submitted (Vrasidas, 2000).

Constructivists place importance on interaction with the environment and with peers. It is also important for students to put course content into real-life contexts. An example of an activity based on constructivism is case studies, where students work together. Constructivists find all four types of interaction to be important, particularly the learner-technology interaction. The use of technology is fundamental in this philosophical view, as it is seen as a tool by which the learner can create knowledge (Vrasidas, 2000).

In contrast to the objectivist, evaluation by constructivists is based on multiple perspectives. The instructor believes that there is more than one correct answer and students are encouraged to use multiple methods for solving problems. Evaluation in a constructivist distance education course is ongoing (Vrasidas, 2000).

4-Square Model

The 4 square model classify four types of technologies that support the distance learning group process: (1) same time/same place, (2) different time/different place, (3) same time/different place, and (4) same place/different time. These four categories are used for describing technologies that currently support distance teaching and learning (McIsaac & Gunawardena, 2001).

Same time/same place interaction is the most common form of face-to-face meetings. In this type of interaction, accepted teaching practices are only modified slightly to accommodate electronic media (McIsaac & Gunawardena, 2001). The electronic media might include an overhead projector, an electronic blackboard, or a projection system. A more sophisticated media might set-up might include individual workstations with a desk top system.

Same time/different place interaction takes place in one of two ways. First, it can be a meeting through a telecommunications medium or teleconferencing where participants who are separated by geographic distance can interact with each other simultaneously. Second, it can be the use of non-interactive media such as open broadcast television and radio to instruct a vast number of students at the same time without providing students the option to interact with the originators of the program (McIsaac & Gunawardena, 2001).

The third method of delivery is different time/same place instruction. This type of instruction usually takes place when distance learners gather at different times to interact with instructors, tutors, and other students. The types of services provided by most institutions are student access to media equipment such as videocassette players and

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microcomputers, and library facilities such as books, tapes, and cassettes, rather than arrangements for tutor-student interaction (McIsaac & Gunawardena, 2001).

The final type of instruction is called different time/different place instruction. The technologies used in this type of instruction can be classified in one of two ways: those that transmit one way information (such as print, and audio- or videocassette) and those that provide for interaction. Those that provide interaction can be further divided into two groups. The first includes interaction between the instructor and the learner, or among groups of learners. The second are those that provide learner-machine interaction. This might include interactive video or computer-assisted instruction(McIsaac & Gunawardena, 2001).

Chickering and Gamson's Seven Principles

The model developed by Chickering and Gamson (1987) is the primary model used for purposes of this study. They described a conceptual model for planning and assessing undergraduate education. The model was assembled from previous research on the undergraduate experience and identified seven principles for good practice in undergraduate education.

Chickering and Ehrmann (2001) later elaborated on the seven principles by writing an article that described some of the most cost-effective and appropriate ways to use computers and other technologies to advance learning. A description of each of the seven principles, along with examples on implementation, follows.

The first principle states that good teaching practice includes the encouragement of contact between students and faculty. Frequent interaction with faculty members, both in and out of class, is an important factor in the student's motivation and involvement in

the class. Furthermore, knowing faculty members encourages students to think about their intellectual commitment and helps them to think about their future (Chickering & Ehrmann, 2001). Using email or online discussion boards is one way to encourage contact between students and faculty. Encouraging students to discuss their academic/career goals with the instructor is another way to foster contact.

The second principle relates to developing reciprocity and cooperation among students. This principle states that more learning is achieved when working in a team effort. Competition and isolation of students is discouraged because sharing ideas with each other deepens understanding and thinking and therefore, learning (Chickering & Ehrmann, 2001). Using learning teams or pairs is one way to develop reciprocity and cooperation. Additionally, having students conduct peer critiques/reviews of each other's work is another way to encourage this outcome.

The encouragement of active learning is the third principle. Learning should not be seen as a "spectator sport." Students do not learn as much when sitting and listening to teachers lecture. Furthermore, regurgitation of material is not considered true learning. Instead, students are encouraged to write and reflect on course content (Chickering & Ehrmann, 2001). Having students analyze real-life situations and relate it to their own experiences is one way to foster active learning. Conducting experiments related to the coursework is another way instructors can encourage active learning.

The fourth principle encourages prompt feedback. Instructors need to first assess students' existing knowledge and competence in the content area. Knowing what students do and do not know will help the instructor focus on what content should be delivered and in what manner. Students need to be given frequent feedback on their performance so

that they may assess what they have learned and still need to learn (Chickering & Ehrmann, 2001). There are several ways that instructors can encourage prompt feedback. Assessing students' knowledge in the beginning of the semester and is one way to do this. Using electronic quizzes that provide immediate scores is another way.

Emphasizing time on task is the fifth principle. This principle states that greater amounts of time and energy put into learning equals greater learning. Students need to learn to use their time well and to set realistic amounts of time for coursework (Chickering & Ehrmann, 2001). Emphasizing to students the importance of using time wisely is one simple way of emphasizing time on task. Additionally, providing guidelines on how much time it should take to prepare for class is another, more specific way that instructors can emphasize time on task. Finally, a way to estimate the amount of time students are spending on class is by tracking how frequently students post comments online.

The sixth principle relates to communicating high expectations. The premise behind this principle is that expecting more usually means getting more (Chickering & Ehrmann, 2001). Talking with students who are "falling behind" is one way that instructors can communicate that they have high expectations. Assigning penalties for late assignments is another way to do this.

The last principle is respecting diverse talents and ways of learning. Students all come from different backgrounds and will learn in different ways. Instructors need to give students opportunities to show their diverse talents by providing various methods of learning. By providing various methods, students may also learn new ways of learning (Chickering & Ehrmann, 2001). Asking students the methods by which they learn best is

one way to assess the methods to employ in the class. Then, giving a variety of assignments based on the responses, such as tests, papers, and creative projects provides diversity in learning.

Conclusion

There is literature available on the characteristics of good teachers and there is also literature that shows teaching differences by gender and by level of experience. Additionally, there are models of instruction that relate to distance education, as well as a model of good practice in undergraduate education. There is, however, a lack of research on whether those who teach distance education classes use these principles of good practice. There is also a lack of research on whether there are differences in the degree to which they use these practices by gender or by level of teaching experience. The current study sought to do this.

CHAPTER THREE:

METHODS

The purpose of this study was to assess whether instructors of distance learning courses are using Chickering and Gamson's (1987) seven principles for practice in teaching when designing their courses. For purposes of this study, distance education was defined as any course offered via the Internet.

Using current research on the seven principles *(*Chickering &Gamson, 1987) I developed a survey to assess instructor usage of these practices. Furthermore, this study was designed to analyze differences in use of these practices by gender and by teaching experience. Specifically, this study was designed to explore the following research questions:

1. Are instructors of undergraduate online courses incorporating Chickering and Gamson's (1987) seven principles into their courses?

2. Are there differences in the application of the principles for good practice by gender of instructor?

3. Are there differences in the application of the principles for good practice by the level of on-line teaching experience (beginner, experienced, professional)?

4. Are there differences in the application of the principles for good practice by discipline?

This chapter discusses the methodology used in the study. The sampling techniques, instrumentation, data collection methods, and data analysis procedures are all described.

Sample Selection

The sample used for this study was a convenience sample that consisted of distance education instructors representative of schools around the United States and from across different disciplines. To be included in the sample, the instructors had to meet two criteria. First, the instructors had to offer their course completely on-line, meaning that all interactions for the course occurred via the Internet. Second, the class had to be offered at the undergraduate level because the Chickering and Gamson model (1987) focuses primarily on undergraduate education.

The first step in selecting the sample was identifying schools that offer distance education courses. To accomplish this, I visited several distance education websites. Some these included: Distancestudies.com, the Southern Regional Education Board's Electronic Campus, and Peterson's guide to distance learning. Most of these websites had reference lists of institutions with distance learning centers or large numbers of distance learning courses. After compiling a list of institutions, I then visited each institution's homepage and searched for distance learning classes and/or distance learning centers for that institution.

The next step was compiling a list of instructors from each institution. If names and email addresses were available from the website, they were noted. If names were not available from the website, I called the institution and asked for the names and email addresses of distance education instructors. The result of these efforts was a list of 500 instructors teaching online classes in the Spring 2002 term.

Instrumentation

An instrument, the Online Teaching Practices (OTP) survey, was designed specifically for purposes of this study. The OTP identified the extent to which online instructors incorporate the seven principles for good practice. The design of the instrument was based on current models of education instruction. Specifically, constructs from Chickering and Gamson (1987) were used to design the instrument.

The OTP was comprised of 52 items grouped around eight sections. The first seven sections asked items specifically relating to the usage of the seven practices. The final section elicited demographic data about the participants. The response options asked participants to numerically rate how well each item described their online class. The rating scale ranged from 1 through 5, where 1 meant the statement did not describe the class at all and 5 meant the statement described the class very well.

Section One included a series of seven items relating to the first principle of good practice: encouraging contact between students and faculty. Instructors were asked how they encourage students in their classes to contact them. For example, participants were asked whether they listed their contact information (name, address, email address, phone number) on the class web page, how often they checked and responded to email, and whether they solicited regular feedback from students.

The second section included a series of questions to assess instructor efforts to develop Reciprocity and Cooperation among students. Instructors were asked whether students were assigned to work in pairs or teams to complete some assignments, whether students were required to post their contact information online so others could contact

them, and whether students were required to use chat rooms or discussion boards as a method of communicating.

The third section gathered data about instructors' use of Active Learning techniques (Principle 3). Questions from this section asked about specific methods of course content delivery. For example, participants were asked whether they used online discussion boards, hypertext links on their web pages, and whether they required students to conduct experiments related to the class.

Section Four of the survey assessed the use of fourth principle: providing Prompt Feedback. Instructors were asked if they assessed students' knowledge at the start of the terms, how quickly they returned quizzes/test/assignments, and whether grades were available online.

The fifth section asked questions to determine whether instructors use the principle that emphasizes Time on Task. Items in this section asked participants whether they communicated with students about how long assignments took to complete and how difficult the class was in comparison to other classes the student had taken. Instructors were also asked whether they track the frequency of chat room/discussion board comments made by students.

Section Six related to the sixth principle, which involves Communicating High Expectations. The items asked instructors how they communicated their expectations to students For example, items asked respondents whether they tell students they have high expectations, whether there are examples of quality work on the class web page, and whether instructors require students to revise assignments that are not of high quality.

Section seven of the survey asks questions to assess instructor usage of last principle in the Chickering and Gamson (1987) model. This principle relates to Diverse Talents and Ways of Learning and the section includes items relating to how students are asked to complete assignments. Instructors are asked about the pedagogical approaches they employ such as the use of teamwork, creative assignments, and individual assignments.

The last section elicited general information, which could be used to create a profile of the respondents. This information included: the name of their institution, the discipline of the course, the number of semesters the instructor has been teaching online courses, total number of years teaching, and the sex of the instructor. A copy of the survey can be found in Appendix A.

Validity and Reliability

The validity of an instrument is defined as the extent to which items measure the content that they were intended to measure (Creswell, 1994). To enhance the validity of my survey, I did several things. First, after the survey was created, two experts in research design reviewed it. These experts included: a Director for Academic Assessment and an Associate Professor of Higher Education and Student Affairs. They evaluated to the OTP to see if the items on it were easy to read and were related to the research questions posed in the study. Suggestions and comments from the experts were used to revise the survey.

The second step taken to enhance the validity of the study was to conduct a pilot test. I asked three faculty members who were teaching online classes to complete the survey. Those who completed the pilot test provided feedback on the instructions,

questions, format, and the response options. Comments from the pilot participants were used to further refine the instrument. This helped in establishing face validity of the OTP.

The reliability of an instrument refers to consistency, test stability, and test consistency (Creswell, 1994). Since the OTP was created specifically for this study, it was important to check the internal reliability of the scales before beginning the data analysis. To accomplish this, a correlation was run on each of the seven scales on the OTP

Data Collection Procedures

Before starting the data collection process, I received approval from the Institutional Review Board for Research Involving Human Subjects at my institution. After obtaining approval, I began to collect data.

First, the survey was put online using the server managed by WARD (Web Application Research and Development) at my institution. WARD serves the faculty, staff, and students at my institution by providing free support for online surveys and other electronic needs. The week of February 11, 2002, the survey was posted online. At that time, I also sent all potential participants an email that explained the purpose of this study, asked for their participation, provided the URL for the online survey, and gave them my contact information. A copy of this email message appears in Appendix B. Instructors were asked to complete the survey within two weeks. On February 25, a reminder was sent to the instructors. They were given an additional week to complete the survey. A copy of that message appears in Appendix C.

Data Analysis Procedure

After the respondents submitted completed surveys, I began to analyze data. The data were analyzed using the Statistical Package for Social Sciences (SPSS) (Kellough, 1985).

Since the researcher created the instrument used to collect data, it was important to check the internal reliability of the scales before beginning the data analysis. To accomplish this, a correlation was run on each of the seven scales on the OTP.

I then focused on the three research questions posed in the study. The first question explored to degree to which online instructors in general were using the seven principles for good practice identified in the Chickering and Gamson (1987) model. To answer this question, I calculated the mean responses for each section on the OTP. These mean scores were then ranked-ordered from highest mean score to lowest mean score. Given the response options on the survey (1= does not describe my class at all, 5= describes my class very well) the list represented the principles that are most /least implemented by each instructor. The answers from these sections provide a general overview of the usage of the seven principles by distance education instructors.

To answer research question two, I sorted the survey responses into two groups: responses from males and responses from females. I then calculated the average scores of each section for each group. Finally, I conducted an Analysis of Variance (ANOVA) on each of the seven scales to examine if there were significant differences in the mean scores of the two groups.

The third research question explored whether there was a relationship between implementation of the principles and experience with online teaching. To answer this

question, I sorted responses based on the number of years the instructor has been teaching online. They were organized into three groups/levels of teaching experience: Beginner (less than 2 academic terms of online teaching experience), Experienced (3-4 academic terms of online teaching experience), and Professional (more than 4 academic terms of online teaching experience). Next, I calculated the average scores for each section for each group. Finally, I conducted an ANOVA on each scale to examine if there were significant differences in the mean scores among the three groups.

The last research question explored whether there were differences in implementation by discipline. To answer this question, the responses were sorted by discipline. Next, ANOVAs were run to examine if there were significant differences among the disciplines.

In conclusion, this study was conducted to examine the degree to which distance education instructors incorporate the Chickering and Gamson (1987) principles into their teaching of on-line undergraduate classes. The method described in this chapter was deemed sufficient to answer the research questions posed in the study.

CHAPTER FOUR

RESULTS

This chapter is intended to report the results of the study. The first section describes changes that were made to the data collection procedures. The second section provides a description of the sample. Finally, the chapter concludes with the data analysis, which is arranged around the four research questions posed in the study.

Changes in Data Collection Procedure

There was one change in the data collection procedure that was described in Chapter Three. Due to a low response rate from the initial solicitation email, I sent the survey out to another 500 instructors. This email went out on March 4, 2002. As with the first email, this second group of instructors was given two weeks to complete the survey. This increased the total number of potential participants, and increased the number of respondents.

Description of the Sample

Five hundred (500) were initially contacted to participate in the study. Of these 500 email messages, 26 were returned as unknown. This decreased the participant pool to 474. Of this number, 130 surveys were returned. This represented a 27% rate. A second pool of 500 instructors was later contacted. Of these 500 email messages, 31 were returned. This decreased the second participant pool to 469. Of this number, 74 surveys were returned. This number represented a 16% return rate. The total number of respondents from both samples is 204 for a return rate of 22%. In total, there were 106

(52.0%) male instructors and 95 (46.6%) female instructors. Three participants (1.5%) did not identify their gender.

The participants represented various levels of online teaching experience. Forty-two (20.6%) had been teaching online for one to two semesters. They were classified as Beginners. Fifty-three (26.0%) had been teaching for three to four semesters and were classified as Experienced. One hundred and five respondents (51.5%) had been teaching for 5 or more semesters. They were classified as Professionals. Four (2.0%) did not identify their level of online teaching experience.

Participants were also asked about their total number of years of teaching experience, both traditional and online. This provided more information about the overall level of teaching experience within the sample. Eight (3.9%) of the respondents had been teaching for one to two years. Twenty-nine (14.2%) had been teaching for three to five years. Twenty (9.8%) had been teaching for six to eight years. One hundred forty-five (71.1%) instructors indicated they had been teaching for eight or more years. One (.5%) respondent did not indicate his/her teaching experience.

There were a number of disciplines represented among the respondents. Five respondents (2.5%) taught Engineering related courses. Twenty-one (10.3%) taught Business related courses. Fifteen respondents (7.4%) taught Computer courses. Forty-nine percent (24.0%) taught Social Sciences. Sixteen instructors (7.8%) taught Communication courses. Eleven (5.4%) were teaching Science courses. Twenty respondents (9.8%) identified themselves as instructors in Health Sciences. Sixteen respondents (7.8%) taught in the Humanities/Literature. Another sixteen (7.8%) taught in Education. In the Visual and Performing Arts, there were six (2.9%) respondents. In

Home Economics, there were eight (3.9%) respondents. Seven instructors (3.4%) taught in Agriculture. Four (2.0%) identified themselves as teaching Trade/Industrial courses, and another four (2.0%) identified themselves a Math Instructors. There were two (1.0%) instructors of Cross-Disciplinary Studies and one instructor each (.5%) of Architecture and Philosophy/Religion. Two (1.0%) did not indicate the discipline in which they taught. These demographic characteristics are summarized in Table 1.

It is important to note that the online nature of the data collection process prohibited the researcher from looking for any sample error. The participants were selected from lists of email addresses of online instructors at institutions across the country. The researcher was unable to identify the sex, level of online experience or level of teaching experience of potential participants. As a result, it was not possible to compare the respondents to the non-respondents in the sample. Since data are not available on the characteristics of online instructors in general, the researcher was also unable to compare the respondents to the population addressed in the study. The results, therefore, should be interpreted with caution.

<div align="center">Results of the Data Analysis</div>

Since I created the instrument used to collect data, it was important to check the internal reliability of the scales before beginning the data analysis. To accomplish this, a correlation was run on each of the seven scales on the OTP (see Table 2). The findings suggest that the items on some scales hang together more closely than the items on other scales. The correlations ranged from a low of .26 (Expectations) to a high of .81 (Relations Among Students). Essentially, two scales (Relations Among Students and

Table 1

Demographic Characteristics of the Sample (N=204)

Characteristic	n	%
Sex		
Male	106.0	52.0
Female	95.0	46.6
No. Semesters Teaching Internet Courses		
1-2	42.0	20.6
3-4	53.0	26.0
5+	105.0	51.5
No. Years Teaching Experience		
1-2	8.0	3.9
3-5	29.0	14.2
6-8	20.0	9.8
8+	145.0	71.1
Discipline		
Agriculture & Agricultural Technologies	7.0	3.4
Architecture & Environmental Design	1.0	0.5
Business, Marketing, and Management	21.0	10.3
Communication & Tech	16.0	7.8
Computer & Information Sciences	15.0	7.4
Cross-Disciplinary Studies	2.0	1.0
Education and Teacher Education	16.0	7.8
Engineering and Related Technologies	5.0	2.5
Health Sciences & Allied Health Sciences	20.0	9.8
Home Economics	8.0	3.9
Humanities & Literature	16.0	7.8
Mathematics	4.0	2.0
Philosophy, Religion, & Theology	1.0	0.5
Sciences (Biological & Physical)	11.0	5.4
Social Sciences	49.0	24.0
Trade & Industrial	4.0	2.0
Visual & Performing Arts	6.0	2.9

Table 2

Reliability Among Items on Scales

Scale	Alpha
Contact Btn Students/Faculty	.47
Relations Among Students	.81
Learning Techniques	.64
Feedback	.49
Time on Task	.72
Expectations	.26
Ways of Learning	.50

Time on Task) had good reliability, one (Learning Techniques) had moderate reliability, three (Contact Between Students/Faculty, Ways of Learning, and Feedback) had modest reliability and the remaining scale (Expectations) had very limited reliability. The results should be interpreted in the context of these findings.

The first research question posed in the study explored whether instructors of online courses are incorporating Chickering and Gamson's (1987) seven principles into their courses. To address this question, I calculated the mean scores and standard deviations of the participants for all items in each of the seven sections of the OTP. These responses were then rank-ordered in descending order. Higher scores (3.0 - 5.0) reflected that participants are using the principles. Lower scores (1.0-2.99) reflected that these principles were not being used extensively. Table 3 summarizes the means and standard deviations of the OTP scales by all participants. The scores for the seven sections ranged from a low of 2.94 (Time on Task) to a high of 3.78 (Contact between Faculty and Students).

The second research question in the study focused on whether there were differences in the application of the principles for good practice by gender. To address this question, I sorted the data into two groups: responses from men and those from women. Then I ran an ANOVA to compare mean scores on each scale of the OTP. The results of this ANOVA are reported in Table 4. There were no significant differences by gender at the .05 level. If the significance level is changed to .10, however, one difference emerges. In the area of Expectations, women reported higher levels (3.52) than males (3.35).

Table 3

Mean Scores, Standard Deviations and Range of All Scores From All Participants (N=204)

Scale	M	sd	Range of Scores
Contact Between Students/Faculty	3.78	.66	2 - 5
Relations Among Students	3.10	1.19	1 - 5
Learning Techniques	3.29	.85	1 - 5
Feedback	3.75	.74	1 - 5
Time on Task	2.94	.92	1 - 5
Expectations	3.42	.57	1 – 5
Ways of Learning	3.58	.74	1 – 5

Table 4

Results of ANOVAs on Differences Among Scales By Sex

Scale	M	sd	df	F	Sig
Contact Between Student/Faculty			1	.03	.97
Male	3.79	.62			
Female	3.77	.71			
Relations Among Students			1	.58	.56
Male	3.02	1.20			
Female	3.36	1.20			
Learning Techniques			1	1.05	.35
Male	3.22	.85			
Female	3.36	.86			
Feedback			1	.37	.69
Male	3.77	.76			
Female	3.71	.73			
Time on Task			1	.35	.71
Male	2.89	.86			
Female	2.99	.98			
Expectations			1	2.48	.09*
Male	3.35	.57			
Female	3.52	.56			
Ways of Learning			1	1.63	.20
Male	3.50	.74			
Female	3.68	.75			

* = significant at the .10 level

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The third question posed in the study examined whether there were differences in the application of the principles by level of on-line teaching experience. To address this question, I ran an ANOVA by level of teaching experience (Beginner, Experienced, Professional) for each section of the OTP. The results of these ANOVAs are reported in Table 5. There was one significant difference at the .05 level, which was in the area of Expectations. Those who were Professional instructors (5+ semesters) reported communicating higher Expectations to their students. The mean score for the Professional instructors was 3.43. The mean score for both Beginning (1-2 semesters) and Experienced (3-5 semesters) instructors was 3.38. If the level of significance is changed to .10, two more significant differences are revealed in the areas of Learning Techniques and Time on Task.

To further investigate these differences, a t-test for independent means was calculated on the mean responses from participants in each of the three groups on each scale. In the area of Expectations and Time on Task, the t-test did not reveal significant differences at the .05 level. This suggests that while there was a significant difference among all three groups, the differences between any two groups were not significant. There was a significant difference at the .10 level by teaching level in the area of Learning Techniques. Professional instructors reported a significantly higher mean of 3.38 when compared to Beginners at 3.34.

The last research question explored whether there were differences in the application of the principles by discipline. I made one revision in the analysis for this question. There were some disciplines in which there were fewer than 10 participants (e.g. Architecture and Environmental Design). These small cell sizes might have

Table 5

<u>Results of ANOVAs on Differences Among Scales By Level of Online Teaching Experience</u>

Scale	M	s.d.	d.f.	F	Sig
Contact Between Student/Faculty			2	1.05	.37
Beginner	3.70	.71			
Experienced	3.69	.66			
Professional	3.94	.64			
Relations Among Students			2	1.69	.17
Beginner	2.90	1.19			
Experienced	2.92	1.20			
Professional	3.28	1.18			
Learning Techniques			2	2.55	.06**
Beginner	3.34	.99			
Experienced	3.04	.82			
Professional	3.38	.79			
Feedback			2	.98	.40
Beginner	3.57	.82			
Experienced	3.80	.72			
Professional	3.79	.71			
Time on Task			2	2.45	.07**
Beginner	2.84	.94			
Experienced	2.78	.87			
Professional	3.03	.92			
Expectations			2	3.34	.02*
Beginner	3.38	.59			
Experienced	3.38	.55			
Professional	3.43	.55			
Ways of Learning			2	.82	.48
Beginner	3.45	.79			
Experienced	3.59	.70			
Professional	3.62	.74			

* = significant at the .05 level
** = significant at the .10 level

influenced the outcomes of the ANOVA. So, I eliminated the nine disciplines with fewer

than 10 respondents and then ran the ANOVAs . There was one significant difference by

discipline at the .05 level in the area of Expectations. Those teaching in

Humanities/Literature reported the highest mean of 3.56 . The lowest mean of 3.09 was

in the Sciences. If the significance level is changed to the .10 level, two more significant

differences are revealed in the areas of Relations Among Students and Learning

Techniques. In the area of Relations Among Students, the highest mean was in the Health

Sciences (3.68) while lowest mean was in Business, Marketing, and Management (2.67).

In the area of Learning Techniques, the highest mean was in Education and Teacher

Education (3.55) while the lowest mean was in Business, Marketing, and Management

(2.88). A report of these results is found in Table 6.

In summary, I ran a total of 21 ANOVAs to find out if there were differences on

scales of the OTP by gender, teaching experience, and discipline. Of these, there were 7

significant differences. These differences, and their implications for future practice,

research and policies are discussed in the final chapter of this study.

Table 6

Results of ANOVAs of Differences Among Scales By Discipline

Scale	M	sd	df	F	Sig
Contact Between Students/Faculty			7	1.60	.14
Business, Marketing, and Management	3.37	.61			
Communication & Communications Tech	3.85	.64			
Computer & Information Sciences	3.95	.51			
Education and Teacher Education	3.77	.66			
Health Sciences & Allied Health Sciences	3.87	.62			
Humanities & Literature	3.65	.77			
Sciences (Biological & Physical)	3.53	.89			
Social Sciences	3.79	.62			
Relations Among Students			7	1.77	.098**
Business, Marketing, and Management	2.67	1.20			
Communication & Communications Tech	3.14	1.31			
Computer & Information Sciences	3.49	.88			
Education and Teacher Education	3.06	1.12			
Health Sciences & Allied Health Sciences	3.68	1.19			
Humanities & Literature	3.42	1.18			
Sciences (Biological & Physical)	2.73	1.28			
Social Sciences	2.97	1.15			
Learning Techniques			7	1.83	.086**
Business, Marketing, and Management	2.88	.88			
Communication & Communications Tech	3.29	1.11			
Computer & Information Sciences	3.42	.85			
Education and Teacher Education	3.54	.84			
Health Sciences & Allied Health Sciences	3.66	.93			
Humanities & Literature	3.01	.84			
Sciences (Biological & Physical)	3.08	.92			
Social Sciences	3.20	.75			
Feedback			7	.85	.55
Business, Marketing, and Management	3.56	.77			
Communication & Communications Tech	3.79	.79			
Computer & Information Sciences	3.98	.46			
Education and Teacher Education	3.82	.65			
Health Sciences & Allied Health Sciences	3.69	.68			
Humanities & Literature	3.51	.67			
Sciences (Biological & Physical)	4.00	.71			
Social Sciences	3.72	.87			

Table 6 continued

Scale	M	sd	df	F	Sig
Time on Task			7	1.39	.21
Business, Marketing, and Management	2.69	.97			
Communication & Communications Tech	3.26	1.21			
Computer & Information Sciences	3.34	.75			
Education and Teacher Education	2.75	.89			
Health Sciences & Allied Health Sciences	2.91	.87			
Humanities & Literature	3.23	.62			
Sciences (Biological & Physical)	2.79	1.01			
Social Sciences	2.90	.81			
Expectations			7	2.53	.017*
Business, Marketing, and Management	3.11	.61			
Communication & Communications Tech	3.21	.49			
Computer & Information Sciences	3.49	.41			
Education and Teacher Education	3.49	.45			
Health Sciences & Allied Health Sciences	3.50	.57			
Humanities & Literature	3.56	.47			
Sciences (Biological & Physical)	3.09	.62			
Social Sciences	3.51	.54			
Ways of Learning			7	1.68	.12
Business, Marketing, and Management	3.37	.85			
Communication & Communications Tech	3.54	.61			
Computer & Information Sciences	3.80	.57			
Education and Teacher Education	3.66	.71			
Health Sciences & Allied Health Sciences	3.55	.93			
Humanities & Literature	4.00	.51			
Sciences (Biological & Physical)	3.26	.94			
Social Sciences	3.44	.73			

 * = significance at the .05 level
** = significance at the .10 level

CHAPTER FIVE

DISCUSSION

The purpose of this study was to assess whether instructors of distance learning courses are using Chickering and Gamson's (1987) seven principles for good practice when designing their courses. These principles cover: Contact Between Students and Faculty, Relations Among Students, Learning Techniques, Feedback, Time on Task, Expectations, and Ways of Learning.

This chapter is designed to examine the results of this study and their implications for further practice, research, and policy. The first section addresses the research questions posed in the study. Next is a discussion on how the results relate to prior research. Implications for future practice, research, and policy are examined in the third section. The chapter concludes with general findings about the use of the principles.

Discussion

The first research question examined whether instructors of online courses are incorporating the seven principles into their courses. To address this question, I calculated the mean scores and standard deviations of the participants for all items in each of the seven sections of the OTP. Higher scores (3.0 - 5.0) reflected that participants are using the principles. Lower scores (1.0-2.99) reflected that these principles were not being used extensively. The scores for the seven sections ranged from a low of 2.94 (Time on Task) to a high of 3.78 (Contact between Faculty and Students). Of the seven sections, six were in the in the higher range of 3.0-5.0. In order, they were Contact between Faculty and Students (3.78), Feedback (3.75), Ways of Learning (3.58), Expectations (3.42), Learning Techniques (3.29), and Relations Among Students (3.10).

The lowest score, which reflected that this principle was not being used extensively, was in the area of Time on Task (2.94).

Based on these scores, it would seem distance educators are using the seven principles in general. The highest scores in the area of Contact (3.78) and Feedback (3.75) indicate that instructors make a concerted effort to be accessible and available to their students, and to offer feedback to students on a regular basis.

The next highest scores were in of Ways of Learning (3.58), Expectations (3.42), and Learning Techniques (3.42). These high scores indicate that instructors respect that all students learn differently, they communicate high expectations to their students, and they employ various active learning techniques.

Relations Among Students was also reported to be extensive by participants, but to a somewhat lesser degree (3.10). This might indicate that while instructors are making an effort to have students interact via Internet courses, they are not able to do so as often or perhaps as successfully as they would like. Due to the nature of the web classroom, instructors may not assign as much teamwork or promote team discussion to the same degree as they do in the traditional classroom. This is assuming that the traditional classroom does promote a high degree of interaction.

An area in which instructors seem to need improvement is Time on Task. Time on Task refers to using time productively. Instructors might emphasize this by providing students a guideline of how much time it should take for them to prepare for class. An instructor might measure time on task by tracking how frequently students post comments online.

There are two possible explanations for why instructors are not implementing this principle in online courses. First, some of the courses offered via the Internet may be self-paced. The deadlines may be posted weeks in advance and students are simply told to pace themselves and finish the assignment by the assigned date. In this case, instructors would not be able to tell the students how much time it should take them to complete each assignment. Second, instructors may not be implementing the Time on Task principle in the traditional classroom hence do not employ the principle in their online classes either. These instructors might assume that once students reach the college level, they should be able to motivate themselves to use their time efficiently and therefore do emphasize this task in any of their classes.

It is also important to point out that many respondents (71.1%) had been teaching for 8 or more years. Of this 71.1%, only 51.5% had been teaching online courses for more than 5 semesters (Professional) and 20% had taught online for only 1-2 semesters. It would seem that many online instructors have more experience with traditional classroom instruction than distance education instruction. This may explain why some of the principles are more extensively used than others.

The second research question in the study examined whether there were differences in the application of the principles by gender. To address this question, the data were sorted into two groups: responses from men and those from women. An ANOVA was run to compare mean scores on each scale of the OTP. There were no significant differences at the .05 level. If the level of significance were changed to .10, however, one difference emerged. In the area of Expectations, women reported higher levels (3.52) than males (3.35).

There may be an explanation for the difference in these scores. It is reasonable to suggest that while both men and women might have high expectations for their students, women might be more likely to explicitly express them. Women might be telling their students that they have high expectations of them, might be providing examples of what they consider to be "good work" and might be assigning extra work if it appears a student needs it. Previous research indicates that both male and female students perceive female faculty to be more supportive and personal with students (Bennett, 1982). Women explicitly stating high expectations might indicate to the class that they are being more supportive by being upfront. Students may also interpret explicitness as being more personal. It is also important to keep in mind that the correlation for the Expectations scale was only .26. This suggests the items on the scale are not necessarily measuring Expectations so results should be considered in that context.

The third research question examined whether there were differences in the application of the principles based on level of teaching experience. I ran an ANOVA by level of teaching experience (Beginner, Experienced, Professional) for each section of the OTP to determine any differences. There was one significant difference at the .05 level, which was in the area of Expectations. Those who were Professional instructors reported communicating higher Expectations to their students. The mean score for the Professional instructors was 3.43. The mean score for both Beginning and Experienced instructors was 3.38. Since both Beginners and Experienced instructors had the same mean, the difference is between Professional instructors and the other two groups.

There may be two explanations for the Professional instructors communicating higher expectations. First, it is reasonable to suggest that as instructors become more

experienced, they feel more comfortable expressing their expectations. New instructors may not feel comfortable or may not feel the need to express their expectations to students. Second, it is possible that those who are Professional teachers are teaching higher-level courses in which they naturally have higher expectations for the students. Again, however, the low reliability of the Expectations scale should be kept in mind.

To further investigate these differences in Expectations, a t-test for independent means was calculated on the mean responses from each pairing of respondents (i.e. Beginners v. Experienced, Beginners v. Professional, Experienced v, Professional). Unusual as it may be, the t-tests did not identify where the significant difference lay in the scale. This suggests that while there was a significant difference overall among the groups, there were no differences large enough between any two groups to be significant.

If the level of significance is changed to .10, two more significant differences by level of experience are revealed in the areas of Learning Techniques and Time on Task. Again, to further investigate these differences, a t-test for independent means was run. In the area of Learning Techniques, the t-test revealed that Professional instructors reported a significantly higher mean of 3.38 when compared to Beginners at 3.34. It is reasonable to suggest that the reason Professional instructors scored higher than Beginners is because they have been teaching longer and have been able to utilize more learning techniques in their classes. Beginners may have knowledge about various learning techniques but either hesitate to use them, or have not had been in the field long enough to do so.

In the area of Time on Task, the t-tests did not reveal where the significant differences lay in the scale. This suggests that while there was a significant difference

overall among the groups, there were no differences large enough between any two groups to be significant. Based on the mean scores, however, it is reasonable to conclude that Professional instructors (3.02) more often emphasize Time on Task than do Beginners (2.84) or Experienced (2.78). Interestingly, the biggest difference in scores is between Professional and Experienced instructors. This may indicate that teachers start by somewhat emphasizing Time on Task and as they become more comfortable, they decrease their emphasis. Later, as Professionals, they find that this emphasis must be reinforced and do so at a much higher level.

The last research question explored whether there were differences in the application of the principles by discipline. To address this question, ANOVAs were run for each section by discipline. Due to small cell sizes, several disciplines were eliminated from the test. Some of these included: Engineering and Related Technologies, Architecture, Trade and Industrial, and Agriculture and Agriculture Technologies. There was one significant difference by discipline at the .05 level in the area of Expectations. Instructors teaching in the Humanities/Literature reported communicating higher expectations to their students. The mean score for Humanities/Literature was 3.56. The lowest mean score of 3.09 was in the Sciences.

There may be a couple explanations for those in the Humanities/Literature communicating higher Expectations. Items in the Expectations scale asked instructors if they provided examples of high quality work, if they required students to revise papers/projects when they do not meet class expectations, and whether they suggest extra reading or writing tasks. Due to the nature of Humanities/Literature courses, it is reasonable to suggest that there is more writing assignments required in these courses

than in the Sciences. If so, Humanities/Literature instructors would be expected to report higher scores on this scale. Second, more women teach Humanities and women were over-represented in the sample for the study. As noted above, women reported significantly higher scores on the Expectations scale. It is possible, therefore, that in this case there is multi-colinearity between gender and discipline. That is, it is difficult to discern whether the high score reported by Humanities faculty is due to the discipline or due to the possible influence of gender.

If the significance level is changed to the .10 level, two more significant differences by discipline emerge in the areas of Relations Among Students and Learning Techniques. In the area of Relations Among Students, instructors in the Health Sciences (3.68) implement more efforts to increase student interaction than do instructors in Business, Marketing, and Management (2.67).

There may be an explanation for those in Health Sciences promoting more Relations Among Students. While instructors of Business, Marketing, and Management may promote teamwork, it is reasonable to suggest that there is also a certain degree of individual competition within these types of discipline. Items on the scale asked instructors if they used learning teams/pairs, whether they required peer critiques, and if they required students to use discussion boards and/or chat rooms. It is possible that more emphasis is put on individual rather than group problem solving in business-related classes. Instructors of Health Sciences may assign more group or team problem-solving assignments.

In the Area of Learning Techniques, instructors in Health areas (3.66) and Education /Teacher Education (3.54) reported using more active Learning Techniques

than Business, Marketing, and Management instructors (2.88). It is reasonable to suggest those instructors with a health or education background would be familiar with active learning methods and would therefore implement them more in their classroom.

Overall, there were seven significant differences among the 21 ANOVAs: one related to gender, three related to level of teaching experience, and three related to the discipline. These findings are interesting when compared to the previous research conducted on teaching differences.

Relationship of the Findings to Prior Research

When the results of the current study are compared to findings from prior research, two patterns emerge. In some cases, the current study supports the findings of prior research. In other cases, the current findings neither support not contradict prior research. This is due to the lack of current research on the use of the seven principles in online courses.

The results of the current study support the findings of some prior research. For example, the present results revealed that women instructors communicate higher expectations to their students than men do. While both men and women may have high expectations of their students, the women more explicitly express this. Previous research indicates that female instructors were perceived as expressing more empathic concern in their interactions with students than male instructors (Nadler & Nadler, 2000). This concern might include setting expectations for students in the classroom.

The present study also revealed that Professional instructors implement more learning techniques than Beginners. This finding supports previous studies. Novice teachers have been found to use a narrow range of instructional strategies that often do

not match the nature of the individual student or subject matter (Tomlinson et al., 1997, p. 271).

The current study revealed that instructors of online courses are using the seven principles to a fair extent. These principles state that instructors should encourage contact between faculty and students, develop cooperation (relations) among students, encourage active learning techniques, and encourage feedback. Additionally, instructors should emphasize time on task, communicate high expectations to their students, and respect diverse ways of learning. The use of these principles supports previous research on the essential characteristics of teaching. There are specific core standards (characteristics) that teachers should be meeting (Ambach, 1996). These core standards parallel several of the principles used for purposes of this study.

First, teachers must fully understand that students have different ways of learning. All students have a different approach to learning and the teacher should provide opportunities that are adapted to those different learning styles (Ambach, 1996). The mean score in the area of Ways of Learning (3.58) revealed that online instructors seem to recognize and respect different learning styles.

Second, teachers should use a variety of strategies to help students develop (Ambach, 1996). In the Learning Techniques section of the OTP, instructors were asked if they used a variety of strategies. These included: analyzing real-life situations, asking students to relate course content to past experiences, and requiring that students conduct experiments outside of class. Based on the mean score (3.29), it would appear that online instructors are doing this.

Third, teachers should use both individual and group motivation. This translates into creating a learning environment that fosters positive social interaction. (Ambach, 1996). This core standard parallels with the Relations Among Students scale on the OTP. Instructors had a mean score of 3.10 in this area. This indicates that while there is room for improvement, the principle is being implemented.

Implications for Future Practice, Research, and Policy

The results of this study have several implications for future professional practice. These findings can be used to assist instructors of online courses and distance learners. Each constituency can benefit from these results as they examine an online course.

The first group that can benefit from these results includes instructors of online courses. The present study revealed that overall instructors are using the seven principles. The highest mean score was in the area of Contact (3.78). While this is a high score, there are ways that instructors can increase contact. Participating in online real-time discussions with students and responding to comments/questions that are posted online might increase contact. Additionally, instructors should make sure that all of their contact information is visible on the web page so students can easily access them.

The principles of Feedback (3.75) and Ways of Learning (3.58) were also assessed as being used extensively. Feedback can be further increased by giving students access to their grades online and by using electronic quizzes/tests that immediately calculate and reveal students' scores. Ways of Learning refers to the instructors' understanding that all students have different learning styles and accommodating those different styles in the assignments and forms of evaluations they use in their classes. An instructor might ask about students' learning styles, interests, or backgrounds at the

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beginning of each course to assess the different learning styles represented. The instructor might then include different types of assignments (group work, individual work, and creative projects) to meet the different learning styles represented.

To improve in the area of Expectations (3.42), instructors can first explicitly state to the class their expectations. Furthermore, instructors can demonstrate high expectations by asking students to revise papers/projects that do not meet class expectations and suggest extra readings or writing tasks to those whose work is not meeting expectations.

Learning Techniques (3.29) refers to the use of active learning. Instructors can promote more active learning by asking students to relate course content to past experiences and by giving students real-life situations to analyze. Requiring students to locate and find sources for the class outside of the class website also promotes active learning.

Relations Among Students was also reported to be extensive by participants, but to a somewhat lesser degree (3.10). Instructors might increase student interaction by assigning them to work in pairs or teams. Requiring students to use discussion boards and chat rooms to post comments/questions may also increase interaction.

The only principle not used extensively was Time on Task (2.94). Knowing this area of weakness can help instructors to improve Time on Task as they design their future online courses. Instructors might find that providing guidelines for the minimum amount of time they expect students to spend on class preparation and asking students how much effort they exert on individual assignments would increase Time on Task. Additionally,

instructors can track how frequently each student posts comments online. This may give them an idea of how much time students are spending online for the course.

The results from this study also revealed that females communicate higher expectations than males. It is important to remember that females are over represented in the sample and that the reliability of the Expectations scale is low. However, if male instructors wanted to improve in this area, there are several steps they could take. First, they can explicitly state in their online syllabi the kind of work they expect from students. Additionally, they might provide some examples of what they consider to be high quality work. Establishing penalties for work turned in late is another way male instructors might communicate high expectations.

The current study also revealed that Professional instructors use more active learning techniques than do Beginners. Knowing this, Beginner online instructors can look to find ways to increase the learning techniques they use. Beginners might require students to visit places related to class on their own or conduct experiments outside of class.

Finally, the study revealed differences by discipline on the Relations Among Students, Learning Techniques, and Expectations scales. It is difficult to offer specific implications in this instance since there were eight dramatically different disciplines represented in the sample. Suffice it to say that teachers in different disciplines employ different teaching approaches but might benefit from using the principles for good practice.

Distance learners might also benefit from the results of this study. The current results indicate that instructors are implementing the seven principles to a fair degree.

Students who are unsure of taking an online class might find this helpful in their decision-making as they examine the quality of the instruction. Learners might examine the course to see if different learning styles are taken into consideration, active learning techniques are implemented, and feedback is provided.

In addition to looking at elements of the course content, a distance learner might make note of whether to take an online class from a male or female instructor. The current study revealed that women communicate higher expectations than men, though the reliability of that scale is suspect. Based on these findings, learners seeking explicit expectations might want to consider courses taught by females.

Based on the current study, Professional instructors implement more learning techniques than Beginners. Knowing the differences in learning techniques used by Beginners versus Professionals might help distance learners determine which class would better suite their learning style. Students who are active learners might choose to take a course with a Professional instructor while other learners might prefer a course taught by a Beginner. Professionals also communicate higher expectations and time on task than Beginner or Experienced instructors. Learners seeking a course with high expectations and an emphasis on using time wisely might be better served by a course taught by a Professional.

This study also has implications for future research. The present study examined whether instructors of distance learning courses are using the seven principles. The findings revealed that overall the principles are being used. A future study might explore the same question of usage but compare usage between traditional classroom instructors

and online course instructors. Such a study would expand what we know about the principles of good teaching practice in general.

The present study found that overall the principles are being used by online instructors. Another study might examine the outcomes of students taking online courses. This may indicate whether student performance is related to the usage of the principles.

The present study also examined if there were overall differences in the use of the principles based on gender, teaching experience, and discipline. Another study might explore the overall differences by different factors. These could include: size of institution and institutional control (public/private). This type of study could expand what is known about the quality of online instruction.

Additionally, a future study might target specific disciplines. The current study examined the usage of principles based on a broad cross section of disciplines. A study on specific disciplines could be conducted to determine whether instructional differences are based by discipline or are driven by the online nature of the class.

Finally, there are implications for policy as a result of this study. Specifically, academic policymakers can use the results in several ways. First, they might use the results when considering policies regarding assessment of online classes. Either the OTP or a similar tool might be used to promote quality of instruction in distance courses.

Second, campus policymakers might use the results of this study to help guide them in decisions regarding scope of distance education courses. Knowing that the seven principles are being implemented in distance courses may assist them in determining whether additional courses should be available.

Finally, campus academic policymakers might use the results to assist in the determination of who teaches distance-learning courses. Knowing that there are differences based on levels of experience and gender might make a difference in the assignment of distance course loads.

Limitations of the Study

This study, as with any study, had several limitations. The first limitation was the low response rate (22%). The limited response rate may render some of the findings suspect and limit the generalizeability of the results.

Another limitation to the study related to the instrument. The instrument was created using the literature and was reviewed by a panel of experts to determine if it was appropriate for the research questions posed in the study. As a result, the face validity was somewhat reasonable. However, the internal consistencies may render some of the findings suspect. A correlation was run on each of the seven scales on the OTP. The correlations ranged from a low of .26 (Expectations) to a high of .81 (Relations Among Students). Essentially, two scales (Relations Among Students and Time on Task) had good reliability, one had moderate reliability (Learning Techniques), three had modest reliability (Contact Between Faculty/Students, Ways of Learning, and Feedback), and the remaining scale had very limited reliability (Expectations). The results, therefore, should be interpreted in the context of these findings.

An additional limitation to the study related to the examination of differences by discipline. Because some disciplines had fewer than 10 respondents and were eliminated from the ANOVAs, only select disciplines were compared. The results, therefore, are limited only to those disciplines examined and do not represent all disciplines.

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There were several limitations related to the potential for sample error. First, the participants were selected from lists of email addresses of online instructors at institutions across the country. The researcher was unable to identify the sex, level of online experience or level of teaching experience of potential participants. As a result, it was not possible to compare the respondents to the non-respondents in the sample. Since data are not available on the characteristics of online instructors in general, the researcher was also unable to compare the respondents to the population addressed in the study.

The second limitation related to the gender of the respondents. There were more female respondents than male. There were also more instructors represented in the Humanities than in other disciplines. Given that women are generally more represented in the Humanities, it is reasonable to suggest that multi-colinearity may have occurred between gender and discipline. The results, therefore, may have been skewed.

Finally, those who responded to the survey may have been more interested in the topic of distance education. As a result, it might be difficult to make generalizations about those teaching in distance education. The results of this study should be interpreted in this context.

Despite the limitations to the study, the results provide some interesting insight to the area of online instruction. Since the inception of the WWW, millions of students have engaged in online learning and these numbers continue to grow. Because of this growth, there is a need to evaluate the quality of online courses. The current study provided some initial data about the quality of online instruction.

The results suggest that in general instructors are using the Chickering and Gamson (1987) principles, but there are areas in which they might improve. If colleges

and universities expect online classes to be taught well, they may need to pay attention to the degree to which these principles of good practice are being implemented. Those areas that are weaker can be improved upon based on suggestions from the OTP. That is, the items on the instrument identify certain behaviors associated with good teaching practices. Engaging in those behaviors might enhance the quality of instruction in online classes. Additionally, the current study revealed that there are some teaching differences based on gender and by level of teaching experience. Colleges and universities may need to evaluate these differences and determine if changes need to be made when providing guidelines for course instruction. The current study sought to identify the strengths and weaknesses of online instruction so that future online classes might be more purposefully designed to enhance the quality of that instruction.