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Student Perceptions of Hybrid Classes at a Notebook University

Dawn M. Olson

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STUDENT PERCEPTIONS OF HYBRID CLASSES
AT A NOTEBOOK UNIVERSITY

by

Dawn M. Olson
Bachelor of Science, Minot State University, 1991
Master in Management, Minot State University, 1999

A Dissertation

Submitted to the Graduate Faculty

of the

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for the degree of

Doctor of Philosophy

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2003

This dissertation, submitted by Dawn M. Olson in partial fulfillment of the requirements for the Degree of Doctor of Philosophy from the University of North Dakota, has been read by the Faculty Advisory Committee under whom the work has been done and is hereby approved.

Maryna R. Olson
Chairperson

Richard J. Landry

Mark Guy

Sandy Braathen

This dissertation meets the standards for appearance, conforms to the style and format requirement of the Graduate School of the University of North Dakota, and is hereby approved.

Joseph N. Benoit
Dean of the Graduate School

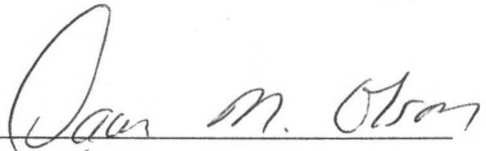
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TABLE OF CONTENTS

LIST OF TABLES	vi
ACKNOWLEDGMENTS	vii
ABSTRACT	viii
CHAPTER	
I. INTRODUCTION	1
Purpose of the Study	2
Research Questions	3
Significance of the Study	3
Delimitation of the Study	4
Limitations of the Study	4
II. REVIEW OF THE LITERATURE	5
Enhancement of Learning Through Technology	5
Hybrid Courses	16
Rationale for Hybrid Model	18
Developing Hybrid Courses	20
Effectiveness of Hybrid Courses	23
Student Responses	25
Gender and Education	27
Conclusion	30

III.	METHODS AND PROCEDURES	32
	Introduction.....	32
	Population and Sample	33
	Survey Instrument.....	33
	Procedure and Design	34
	Data Analysis	34
IV.	RESULTS.....	36
	Participant Demographic Information	37
	Research Question One.....	40
	Research Question Two	43
	Research Question Three	46
	Research Question Four.....	48
	Open-Ended Questions	50
	Summary	61
V.	SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS	63
	Summary	63
	Conclusions.....	64
	Recommendations.....	72
	APPENDICES	74
	REFERENCES	81

LIST OF TABLES

Table	Page
1. Seven Principles for Good Practice in Undergraduate Education	10
2. Eight Characteristics of Effective Teaching	11
3. Good Teaching Tips: The Top Ten Requirements	11
4. Frequency and Percentages of the Respondents on Demographic Characteristics.....	38
5. Frequency and Percentages for Student Preference of Hybrid Courses, Approach to Learning, and Number of Courses Taken	39
6. Percentages for Student Perception of Hybrid Courses.....	40
7. Percentage of Differences Between Gender and Perception of Hybrid Courses	44
8. Correlation Between Number of Hybrid Courses Taken and Student Perception	47
9. ANOVA Results for Academic Standing and Perception of Hybrid Courses.....	48
10. Yes Responses to Preference of Hybrid Courses and Frequencies.....	51
11. No Responses to Preference of Hybrid Courses and Frequencies.....	53
12. Changes in Approach to Learning as a Result of Hybrid Classes and Frequencies	55
13. Responses: What Students Liked Most About Hybrid Classes and Frequencies	56
14. Responses: What Students Disliked Most About Hybrid Classes and Frequencies	58
15. Additional Comments on Hybrid Classes and Frequencies.....	60

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To My Grandmother
Elizabeth Matthews

ABSTRACT

The purpose of this research study was to investigate whether students at Valley City State University perceive that hybrid classes, as compared to the traditional face-to-face classes, improve their learning experience through the Seven Principles for Good Practice in Undergraduate Education by Chickering and Gamson. The objectives were to identify how students perceive hybrid classes, determine whether differences exist between male and female students in the perception of hybrid classes, determine if there is a relationship between the number of hybrid courses taken and perception of hybrid classes, and determine if differences exist between academic standing and perceptions of hybrid classes. A sample of 163 students was surveyed. Resulting data were analyzed utilizing frequency distributions, mean rank tables, percentages, crosstabulations, and Chi Square statistics.

The majority of students who were surveyed for this study preferred hybrid classes to traditional face-to-face classes. The most prominent reasons were the students' ability to complete coursework at their own convenience, the increased time for other activities, not having to physically meet all the time, the increased interaction with others, and the freedom that goes along with hybrid classes. Student responses were favorable toward hybrid courses and their learning experience. The hybrid course model enhanced the students' learning experience through the increase in the amount and promptness of

feedback between students and between students and the instructor. In addition, students developed more control and a sense of responsibility for their own learning.

CHAPTER I

INTRODUCTION

Advances in computer software and hardware, the prevalence of computers on and off campus, and easy access to the Internet are providing the fuel for changes in teaching and learning. These readily available and quality instructional technologies are forcing higher educational institutions to reconsider how they do business. Labels such as cyber-education, distributed learning, distance education, and asynchronous learning networks are becoming commonplace in universities throughout the modern world. Course schedules with class designations such as fully online, web-enhanced, and hybrid provide further evidence of this change (Moskal & Dziuban, 2001).

As colleges and universities re-examine traditional teaching methods, educators concentrate on a question that has fueled pedagogical debates for years: What are the most effective strategies for delivering instruction to an increasingly diverse student population? This question today takes on an added complexity because the answers involve more options with improved technology. Many university students are computer proficient and have the technology available to manage online classes. These advances facilitate hybrid courses where students are not required to spend as much time in traditional face-to-face classes (Moskal & Dziuban, 2001).

To create a niche in higher education and provide leading-edge advances in technology, Valley City State University (VCSU) became the first university in North

Dakota and the second one in the United States to provide notebook computers to its faculty and students. Only universal access to computers would enable VCSU to achieve a learner-centered environment and promote lifelong learning; hence, everyone needed computer access, 24 hours a day, seven days a week (Holleque, 1999).

Since the introduction of the laptop computers in 1996, faculty at VCSU became interested in applying new teaching and learning strategies in their classrooms. With the incentive of Bush Grant dollars, faculty were encouraged to develop and offer courses using a hybrid model. A hybrid course as defined by the *Valley City State University Year-Long Schedule* (2003) is “seat-time is replaced by web-based components (Blackboard or other). The amount of seat-time replaced determines the percentage of time the course is web-based” (p. 2). Valley City State University began offering hybrid courses Fall Semester 2001.

Purpose of the Study

The purpose of this dissertation study was to investigate whether students at Valley City State University perceive that hybrid classes, as compared to the traditional face-to-face classes, improve their learning experience through the Seven Principles for Good Practice in Undergraduate Education by Chickering and Gamson. More information pertaining to the principles for good practice in education is provided starting in Chapter II. The main variables of this study consist of academic standing, gender, number of hybrid classes taken, interaction between student and faculty, cooperation and interaction among students, active learning, time on task, faculty and student feedback, course expectations, and diverse ways of learning. Additional variables include employment, age, living on or off campus, and academic status.

Research Questions

In analyzing the hybrid class model as compared to the traditional face-to-face class model, the following research questions establish the foundation for this study:

1. How did students perceive hybrid classes?
2. Did differences exist between male and female students in the perception of hybrid classes?
3. Was there a relationship between the number of hybrid courses taken and perception of hybrid classes?
4. Did differences exist between academic standing and perception of hybrid classes?

Significance of the Study

Research has shown that hybrid courses offer a number of advantages over face-to-face teaching and totally online courses (Bleed, 2001; Young, 2002; Zeller, 2001). Basically, students favor hybrid courses and feel they learn as much as or more in hybrid courses than in traditional or online courses (Brown, 2002; Garnham & Kaleta, 2002). Based on this information, this study will attempt to identify the attitudes and perceptions of students at Valley City State University toward hybrid classes. This study is beneficial to educators in general because it ties the Seven Principles for Good Practice in Undergraduate Education specifically to the hybrid course. To the best of the researcher's knowledge, no other study like this has been done. The results of this study will provide a benchmark for further studies to model. This study is also beneficial to the faculty at Valley City State University who offer hybrid classes, as no other study like

this has been conducted on campus. The results of this study will provide feedback for faculty to use as a means to critique their hybrid classes.

Delimitation of the Study

The sample will consist of students at Valley City State University who have taken a course structured using the hybrid model between Fall Semester 2001 and Spring Semester 2003. In a survey, students will be asked to provide demographic information and respond to questions concerned with perception of hybrid classes, which will be analyzed quantitatively.

Limitations of the Study

This study was conducted with and limited to students at Valley City State University. The study involved students completing a survey administered during a particular class. Students not in attendance did not participate and limited the sample size. Responses provided by the students are assumed to be a fair representation of their actual perceptions.

Although not the focus of the study, the varying levels of technology used by some faculty was a limitation. Blackboard, the software used to create the online portion of the course, offers many features. Faculty varied in terms of how they designed the online portion of their courses in that some may have been more technical than others. This may have affected how students reacted to a particular hybrid class.

CHAPTER II

REVIEW OF THE LITERATURE

The purpose of this chapter is to provide an overview of the increase in use of technology in higher education. Particular focus will be on the enhancement of learning through effective teaching practices that incorporate technology as a learning tool. This chapter will also present literature regarding hybrid courses and their effectiveness on learning in higher education and gender issues with respect to education. The researcher made an attempt to find literature on academic standing and perception of the learning environment. The only information the researcher found dealt with primary education. The researcher also made an attempt to find literature with respect to differences between academic standing and perception of hybrid classes ending in no results.

Enhancement of Learning Through Technology

The use of technology in higher education to support teaching and learning is exploding. Successful colleges and universities are committed to finding ways to keep pace with changes in technology, because their student bodies are forcing them to (Turner & Perry, 2002). “How many online (web-based) courses does your program offer?” “How often do I have to come to campus for my coursework?” Such questions are now being asked more frequently than ever before, and answers to such questions have become factors for learners to select their institutions and for institutions to attract their students (Leh, 2002).

The archetypal 18-to-22-year-old undergraduate going through school in four consecutive years and financed by parents is becoming increasingly rare and unconventional. People are taking up their degrees later and over longer periods, assembling them out of one course here and a few credit hours there, snatched between jobs, as time, money, interest, and opportunity arise (Brown & Duguid, 1996). Higher education in the information age faces the challenge of meeting the needs of adult students, who increasingly are looking for programs that are time, pace, and place free. Additionally, they are eager for learning opportunities that relate to their work; employers are expressing the same need, especially to institutions that are playing an active role in the economic development of their communities and regions (Sullivan, 1997).

Information technology is no longer a luxury for elite colleges and universities; it is a basic requirement for any institution striving to provide a high-quality educational environment (Twigg, 1999). The growing use of information technology in instruction indicates significant change. It demonstrates the diffusion of information technology across all sectors of higher education (Green, 1996). Application of technology in the curriculum presents many challenges as the higher education institution attempts to effect change in traditional methods of educating (Turner & Perry, 2002). According to Carol Twigg, executive director of the Center for Academic Transformation at Rensselaer Polytechnic Institute, information technology has the potential to improve academic quality by offering greater flexibility in time, place, and curricula and by making students more active, independent participants in the learning process (Twigg, 1999).

Data from the annual *College Computing* survey indicate a major gain in the proportion of college courses, by extension college faculty, using information technology

as an instructional resource and tool for technology-based learning activities. Students are exposed to technology activities that go far beyond word processing; rather, these are experiences that extend the content of the curriculum, enrich the classroom discourse, and enhance learning opportunities (Green, 1996).

The emergence of information technology as a curriculum component is a significant innovation in higher education. Technology in this context is not a goal or an outcome; rather, it is an enabling resource intended to supplement, enhance, and extend the learning experience. Students want and expect technology components in their courses as a result of faculty using various kinds of information technology resources in their instructional and professional activities (Green, 1996).

Today's new technologies are allowing colleges and universities not merely to extend programs to off-campus students, but, more importantly, to change the model of learning. Education is moving away from the one-way transmission model, with the professor as the dominant intelligence and knowledge authority, to a learner-centered one. The emergent learner paradigm stresses collaboration between faculty and students, as well as among students, and it promotes increased use of distributed multimedia learning environments. John Seeley-Brown proposed to treat intelligence not simply as "in the head" and not merely related to one's notes, books, dictionaries, or other cognitive tools. Rather, he said, it extends to one's family, friends, fellow students, co-workers, and others. Thus, it might be more accurate to view intelligence as both in the person and distributed across a broader social and physical environment. As the information age unfolds, the world becomes an even richer place for distributed learning opportunities

that take advantage of increased connections with other minds, voices, images, and content sources (Sullivan, 1997).

Educational institutions of all types are investing enormous effort, money, and risk in technology. As such, each institution would like to know whether its investment is working. Many hope for changes in educational strategies and thus changes in educational outcomes. The technology per se is relatively easy to assess; it is rather obvious, for example, whether e-mail is operating or not. How can educators assess whether technology supports or enhances practices such as collaborative learning, faculty-student interaction, active learning, and increased student time on task as well as outcomes such as more extensive and equitable access to an education (Ehrmann, 1997)?

According to Stephen Ehrmann, author of "The Flashlight Project: Spotting an Elephant in the Dark," one of the most important assumptions underlying technology in education is that technology does not itself cause changes in learning or access (Ehrmann, 1997; Russell, 1999). Rather, it is how the technology is used that matters. The Flashlight Project was developed as a resource for educational institutions to evaluate or analyze their own uses of technology. The Flashlight Project focuses on whether faculty and students find the available technology useful when they try to implement each of the Seven Principles for Good Practice in Undergraduate Education by Chickering and Gamson. Because so much research indicates that these seven principles support better learning, it would be significant for educational institutions to discover that they are being implemented and that technology played an important role (Ehrmann, 1997).

After more than a century of educational research, a body of knowledge exists about what does and does not work in teaching and learning. We now have available to us some principles of learning and instructional design (Boettcher & Conrad, 1999).

In his article entitled "Toward a Theory of Teaching," Dr. Allan Pfnister wrote "teaching is the interaction of a student and a teacher over a subject" (Davis, 1993, p. 6). Building on Pfnister's concept, Davis (1993) described teaching as "a teacher and a student interacting over a subject in a setting" (p. 6). Davis wrote that teaching is a profession that "involves artistic judgments that depend on science" (p. 7). He explained that teaching is part art, part science, and therefore a profession that lends itself to "professional style and judgment." Davis distinguished between teaching and learning. Teaching requires a student; but learning does not require a teacher. The value of teaching is determined by the degree to which it facilitates learning. Research shows that better teaching leads to more learning (Davis, 1993; Jacobsen, Eggen, & Kauchak, 1993).

Teacher-researchers like Cross and Angelo (1988) believe that students learn when they internalize knowledge, skills, and attitudes (KSA) through experience. Jacobsen et al. (1993) explain that the teacher's function is to facilitate the internalization process by (a) disseminating information, (b) demonstrating desired behavior, (c) modeling appropriate behavior, and (d) helping students achieve. Effective teachers help maximize a student's potential by considering the affective, psychomotor, and cognitive domains during planning, implementing, and evaluating activities. Good teachers use their organizational and personal skills to understand students' goals. Organizational skills include meaningful and interesting curricula, appropriate learning

experience and materials, and opportunities for success. Personal skills include being sincere, positive, enthusiastic, supportive, humorous, and listening to students.

Cross and Angelo (1988), Chickering and Gamson (1991), and Leblanc (1998) have identified what students, faculty, and administrators believe are characteristics of good teachers and good teaching practice. The findings of these researchers for comparison are shown in Tables 1-3. As you will see in the tables, the characteristics of good teachers and good teaching practice reported by these three sources are similar in that they focus on the concern for the student with respect to nurturing, learning, individuality, and teacher interaction. The researcher has decided to use the Seven Principles for Good Practice in Undergraduate Education for this study because research (Ehrmann, 1997) indicates that these seven principles support better learning.

Table 1. Seven Principles for Good Practice in Undergraduate Education.

-
1. Encourages contact between student and faculty
 2. Encourages cooperation among students
 3. Encourages active learning
 4. Gives prompt feedback
 5. Emphasizes time on task
 6. Communicates high expectations
 7. Respects diverse talents and ways of learning
-

Chickering & Gamson (1991)

Table 2. Eight Characteristics of Effective Teaching.

-
1. Concern for students
 2. Knowledge of subject matter
 3. Stimulation of interest
 4. Availability
 5. Encouragement of discussion
 6. Ability to explain clearly
 7. Enthusiasm
 8. Preparation
-

Cross & Angelo (1988)

Table 3. Good Teaching Tips: The Top Ten Requirements.

-
1. Passion
 2. Bridging the gap between theory and practice
 3. Remembering each student and class is different
 4. Flexibility
 5. Style
 6. Humor
 7. Visionary leadership
 8. Caring and nurturing
 9. Mentoring
 10. Having fun
-

Leblanc (1998)

Since the Seven Principles for Good Practice were created in 1987, new communication and information technologies have become major resources for teaching and learning in higher education. If the power of the new technologies is to be fully realized, they should be employed in ways consistent with the Seven Principles (Chickering & Ehrmann, 1996).

Adhering to the Seven Principles, technology can be used to advance these principles of good teaching in undergraduate education. Frequent student-faculty contact in and out of class is a most important factor in student motivation and involvement. Communication technologies that increase access to faculty members help them share useful resources and provide for joint problem solving, and shared learning can usefully augment face-to-face contact in and outside of class meetings. By putting in place a more distant source of information and guidance for students, such technologies can strengthen faculty interactions with all students. As the number of commuting part-time students and adult learners increases, technologies provide opportunities for interaction not possible when students come to class and leave soon afterward to meet work or family responsibilities (Chickering & Ehrmann, 1996).

The biggest success story in the realm of technology has been that of time-delayed (asynchronous) communication. Traditionally, time-delayed communication took place in education through the exchange of homework, either in class or by mail. Such time-delayed exchange was often a rather impoverished form of conversation. Now, however, electronic mail, computer conferencing, and the World Wide Web increase opportunities for students and faculty to converse and exchange work much more speedily than before, and more thoughtfully and safely than when confronting

each other in a classroom or faculty office. Total communication increases and, for many students, the result seems more intimate, protected, and convenient than the more intimidating demands of face-to-face communication with faculty (Chickering & Ehrmann, 1996).

Learning is enhanced when it is more like a team effort than a solo race. Working with others often increases involvement in learning. Sharing one's ideas and responding to others' improves thinking and deepens understanding. The extent to which computer-based tools encourage spontaneous student collaboration was one of the earliest surprises about computers. A clear advantage of e-mail for today's busy students is that it opens up communication among classmates even when they are not physically together (Chickering & Ehrmann, 1996).

Students do not learn much just sitting in classes listening to teachers, memorizing pre-packaged assignments, and spitting out answers. The range of technologies that encourage active learning is staggering. Many fall into one of three categories: tools and resources for learning by doing, time-delayed exchange, and real-time conversation. Today, all three usually can be supported with software (Chickering & Ehrmann, 1996).

Students need frequent opportunities to perform and receive feedback on their performance. At various points, students need chances to reflect on what they have learned, what they still need to know, and how they might assess themselves. The ways in which new technologies can provide feedback are many. The use of e-mail for supporting person-to-person feedback was previously mentioned. Computers can provide rich storage and easy access to student products and performances. Computers can keep

track of early efforts, so instructors and students can see the extent to which later efforts demonstrate gains in knowledge, competence, or other valued outcomes (Chickering & Ehrmann, 1996).

Learning to manage one's time well is critical for students and professionals alike. Allocating realistic amounts of time means effective learning for students and effective teaching for faculty. New technologies can dramatically improve time on task for students and faculty members. Technology also can increase time on task by making studying more efficient. Teaching strategies that help students learn at home or work can save hours otherwise spent commuting to and from campus. Students and faculty alike make better use of time when they can easily access important resources for learning (Chickering & Ehrmann, 1996).

High expectations are important for everyone—for the poorly prepared, for those unwilling to exert themselves, and for the bright and well motivated. New technologies can communicate high expectations explicitly and efficiently. Significant real-life problems and conflicting perspectives can set powerful learning challenges that drive students to not only acquire information but sharpen their cognitive skills of analysis, synthesis, application, and evaluation. With technology, criteria for evaluating products and performances can be more clearly articulated by the teacher or generated collaboratively with students. They provide a basis for peer evaluation, so learning teams can help everyone succeed (Chickering & Ehrmann, 1996).

Many roads lead to learning. Different students bring different talents and styles to college. Students need opportunities to show their talents and learn in ways that work for them. Technological resources can ask for different methods of learning through

powerful visuals and well-organized print; through direct, vicarious, and virtual experiences; and through tasks requiring analysis, synthesis, and evaluation, with applications to real-life situations. They can encourage self-reflection and self-evaluation. They can drive collaboration and group problem solving. Technologies can help students learn in ways they find most effective and broaden their repertoires for learning. Aided by technologies, students with similar motives and talents can work in cohort study groups without constraints of time and place (Chickering & Ehrmann, 1996).

There are vast benefits to incorporating technology into classrooms. Computers offer a more level educational playing field by opening doors to learning for those in geographically remote areas (Snider, 1996). Mehlinger (1996) suggests that “[students] did not become bored by technology over time; instead, the desire to use it for their own purposes increases with use” (p. 404). Bialo and Siven (1990) wrote that when technology is used appropriately it can positively impact student achievement, motivation, and social interaction. A UCLA research study on higher education indicated that 87% of teachers agreed: “Students’ use of computers enhances their learning” (Sax, 1999, p. 1). Technology-enhanced learning environments have a positive influence on student motivation through factors such as novelty, curiosity, control, personal choice, and effort (Zhu & Kaplan, 2002). Snider (1996) believed that “Information Age advocates will maintain that social relations can take place over an interactive, multimedia network just as they can take place in a classroom” (p. 24).

Wager and McCombs (1995) summarize the potential benefits of technology-enhanced instructional environments. Such environments can provide greater

opportunities to experience learning activities that are internally driven and constructed, goal oriented and reflective, personally meaningful and authentic, collaborative and socially negotiated, and adaptive to individual needs and cultural backgrounds (Zhu & Kaplan, 2002).

Fusing technology into traditional classrooms results in a hybrid learning experience in which technology supplements, not supplants, course content (Bialo & Siven, 1990; Campus Computing Project, 1997; Green, 2000). Trinkle (1999) advocates, “The most effective use of instructional technology is being made in small-class settings, where technology is being adopted not just to promote efficiency or improve crowded classrooms, but to be integrated into classes that also provide face-to-face interaction” (p. A60).

Hybrid Courses

Research coming out of the University of Central Florida about media-enhanced (hybrid) courses will likely change forever the way most educators teach (Brown, 2002). Hybrid courses promise the best of both worlds, offering some of the convenience of all-online courses without the complete loss of face-to-face contact (Young, 2002; Zeller, 2001). A hybrid course may meet twice a week instead of three times a week in order to free up time and effort for students to work individually or in teams between classes (Brown, 2002; Zeller, 2001).

In a hybrid course, seat time is reduced and some of the course activities—information transfer, exchange of ideas, testing, essay writing, etc.—are distributed throughout the semester, with students accessing course materials and performing other tasks facilitated by the Internet (Brown, 2002; Sands, 2002). This is

often accomplished through an off-the-shelf Course Management System, such as Blackboard or WebCT (Sands, 2002).

The move toward a hybrid education has been quieter than the much-hyped efforts to create completely virtual programs. Graham B. Spanier, president of Pennsylvania State University, calls the convergence of online and traditional instruction “the single-greatest unrecognized trend in higher education today” (Young, 2002, Faculty Preferences section, para. 4). Even some of the oldest colleges, Harvard University, for example, are showing signs of embracing hybrid models (Young, 2002). “Face-to-face is not the gold standard that it’s held up to be,” says Chris Dede, professor of learning technologies at Harvard University’s Graduate School of Education (Young, 2002, A Once-Taboo Idea section, para. 4).

A growing number of colleges are experimenting with hybrid or blended models of teaching that replace some in-person meetings with virtual sessions. John R. Bourne, a professor of electrical and computer engineering at Franklin W. Olin College of Engineering, states that “within five years, you’ll see a very significant number of classes that are available in a hybrid fashion. I would guess that somewhere in the 80- to 90-percent range of classes could sometime become hybrid” (Young, 2002, para. 7).

For several years, researchers at the University of Central Florida, with the Center for Distributed Learning and the Research Initiative for Teaching Effectiveness, have been comparing results in hybrid courses with traditional, face-to-face and fully online courses (Brown, 2002; Sands, 2002). The outcomes are consistent. Students enrolled in hybrid courses have the highest success rate (Brown, 2002; Garnham & Kaleta, 2002).

Rationale for Hybrid Model

Different institutions give different reasons for trying hybrid courses. Some hope to alleviate a shortage of classrooms, as the University of Central Florida did. A few years ago, classroom space there was so tight that the institution rented out a nearby multiplex theater and also rented space from a nearby high school. According to Steven Sorg, assistant vice president for distributed learning at the university, the hybrid course model allowed the scheduling of two classes in the same space. "In the long run, such reductions in classroom use could mean substantial savings," says Ron Bleed, vice chancellor of information technologies at Maricopa Community College (Young, 2002, Faculty Preferences section, para. 11).

One goal of the University of Wisconsin is to reduce commuting time for students (Bleed, 2001; Garnham & Kaleta, 2002; Young, 2002). Carla Garnham, instructional innovator at the Milwaukee campus's learning technology center, states the hybrid model "saves some commuting time and saves on parking" (Young, 2002, Faculty Preferences section, para. 14).

Approximately 89% of all students in the United States commute to a campus (Bleed, 2001). Even though students in hybrid courses do have to drive to the campus every now and then, many students seem to appreciate the occasional classroom sessions (Young, 2002).

Most proponents of hybrid courses say their main motivation is to improve the educational experience for students. Their belief, once taboo, is that face-to-face instruction is not always best and that not all students excel in a lecture format. "Many people find their voice in distance media in a way that they don't in face-to-face

sessions,” says Chris Dede, professor of learning technologies at Harvard University’s Graduate School of Education (Young, 2002, A Once-Taboo Idea section, para. 5). A shy student might never participate in a classroom environment, but the student might frequently speak up in online forums where students have more time to think before they comment (Young, 2002).

Educators know that not all students learn the same way (Bleed, 2001; Young, 2002). Presenting materials in a range of formats can help make sure every student is fully engaged in at least some class activities. With this in mind, Dennis K. Pearl, a professor of statistics at Ohio State University, is developing a hybrid course with a “buffet” style choice of classroom or virtual activities (Young, 2002).

Hybrid courses offer advantages over face-to-face teaching and totally online courses. Instructors reported that the hybrid course model allows them to accomplish course learning objectives more successfully than traditional courses do. Most faculty noted increased interaction and contact among their students and between the students and themselves. Students appear to be more engaged in learning activities and will therefore seek out more assistance (Garnham & Kaleta, 2002).

The hybrid model gives instructors more flexibility with their classes (Bleed, 2001; Garnham & Kaleta, 2002). For example, an archaeologist transformed lectures on artifact classification into online learning activities and, as a result, gained in-class time to allow his students to handle and experience classifying objects. Time flexibility was overwhelmingly the most popular feature of the hybrid courses for the students (Garnham & Kaleta, 2002).

Another advantage of the hybrid model is that it gives us designs for the new economy for a new class of students. This may be the only way colleges and universities can keep up with the continuing population growth and the demands for lifelong learning (Bleed, 2001).

According to Ron Bleed, vice chancellor of information technologies at Maricopa Community College, the greatest potential of the hybrid model is in the people dimension. Combining virtual learning with physical space can restore the human moment in the educational process. The role of socialization has declined sharply for most students. In 1998, Levine and Cureton emphasized the declining social activity and socialization that is occurring today, even on residential campuses. Technology, however, directly influences socialization and is a wonderful vehicle for it (Bleed, 2001). Social interaction plays an important role in active learning and meaningful learning (Leh, 2002).

Developing Hybrid Courses

To teach a successful hybrid course an instructor must invest significant time and effort in redesigning a traditional course. Because seat time is reduced and a significant part of learning is moved online, instructors must re-examine their course goals and objectives, design online learning activities to meet those goals and objectives, and effectively integrate the online activities with the face-to-face meetings. In addition, many faculty must acquire new teaching skills, such as learning to facilitate online interactions and assess student online learning; they may also need to acquire some new technology skills (Garnham & Kaleta, 2002).

In effective hybrid courses there are two dissimilar groups of two that must come together and produce a final result: teachers/students and online/face-to-face classrooms. Some basic instructional strategies exist that can help teachers tie together the two components of their hybrid courses. The first strategy is basic: start small and work backward from your final goals. What should students be able to do at the end of the semester and what must be done to get there (Sands, 2002; Zhu & Kaplan, 2002)? What teaching strategies (lecture, discussion, group work, and case studies) will best help students achieve the course goals (Zhu & Kaplan, 2002)? When planning major integration of communication technologies to a course, careful attention to learning objectives becomes even more important. Teachers should avoid focusing on the technologies themselves (Sands, 2002).

The second strategy that may help teachers better connect their online work with face-to-face teaching is to imagine interactivity rather than delivery. While information transfer may be more effective online, simply putting materials on the web will not guarantee that students engage with and learn from them. For that, activities are needed that require students to perform basic academic tasks, such as summary and analysis, and that place them in conversation with others (Sands, 2002).

The third strategy for teachers is to prepare for loss of power and a distribution of demands on time more evenly throughout the week. Once seat time is reduced and everyone is online, opportunities to monitor and manage interactions move from the geographic space of the classroom to the temporal space of the unit of time that intervenes between classroom meetings (Sands, 2002).

The fourth strategy is to be explicit about time-management issues and be prepared to teach new skills. Students have spent a majority of their time in traditional classroom settings and will have to learn new skills to cope with the distribution of requirements over time. Students will also have to learn to cope with their new dependence on each other if the teacher creates the opportunity for interaction (Sands, 2002).

In the traditional classroom, conversation is hampered by the academic schedule, class design, and size. In the hybrid model, where classroom time is reduced and students engage each other directly online, conversation can be sustained over several days. One of the ways to sustain a conversation is to distribute due dates for reading responses and other writing assignments (Sands, 2002).

The fifth and final strategy that may help teachers better connect their online work with face-to-face teaching is to plan for effective uses of classroom time that connect with the online work (Aycock, Garnham, & Kaleta, 2002; Sands, 2002). As stated earlier, the nature of a hybrid course is to bring dissimilar elements together to perform the same functions and achieve a shared result. Bringing to class responses from students that were posted online is a perfect way to integrate the online and classroom components (Sands, 2002).

Additionally, by sequencing assignments so that they move students from significant discussion online, through written reflections about their responses and the reading, to group or individual projects that are posted to a common forum for discussion and elaboration, teachers can have students engaged in doing, rather than just experiencing or reading (Sands, 2002).

Effectiveness of Hybrid Courses

Quantitative data from the University of Central Florida report that students in hybrid courses achieve slightly better grades than students in traditional face-to-face courses or totally online courses. A study on the effect of hybrid courses at the University of Central Florida by Dr. Charles Dziuban and Barbara Truman-Davis reports that students felt they were more actively involved in their learning and they felt personally empowered. The faculty had high satisfaction levels, and it was “exclusively dependent upon their perceived increased interaction among their students,” according to Dziuban (Lago, 2000, p. 2). The research also shows that student success rates in hybrid courses on the Central Florida campus are equivalent or slightly superior to face-to-face courses, and hybrid courses have lower dropout rates than do fully online courses (Garnham & Kaleta, 2002; Lago, 2000; Young, 2002).

Chris Dede, of Harvard, says that his research and experience in teaching hybrid courses suggests that hybrid models can be superior to traditional classes. “A strong case is beginning to be made on the basis of research evidence that many students learn better online than face-to-face, and therefore a mixture is the best way” (Young, 2002, A Mixture is Best section, para. 2).

A research study of the implementation of a hybrid approach to delivering graduate level courses in the preparation of K-12 public and private school principals and superintendents that incorporates both web-based course content delivery and traditional classroom meetings was conducted by Lee Gray of Winona State University. A total of 84 students in four educational leadership courses were involved in the study. The online course evaluation solicited student responses in two formats, a numerical rating scale and

written comments on their ratings. Based on student perception, 40% indicated they learned more in the hybrid model. Of the respondents, 79% spent more than two hours per week connected to the course online, of which 28% spent more than four hours (Gray, 1999).

During 1999-2001, the University of Wisconsin System Curricular Redesign Grant Program funded a collaborative project involving University of Wisconsin-Milwaukee and four University of Wisconsin college campuses. Coordinated by University of Wisconsin-Milwaukee's Learning Technology Center, the project developed a web resource of hybrid courses; created a model faculty development program for teaching hybrid courses; and supported 17 faculty in their efforts to design, develop, and teach their first hybrid course (Garnham & Kaleta, 2002).

According to the instructors, hybrid courses offer a number of advantages over face-to-face teaching and totally online courses. Instructors reported that the hybrid course model allows them to accomplish course learning objectives more successfully than traditional courses do. Most faculty noted increased interaction and contact among their students and between the students and themselves (Garnham & Kaleta, 2002).

The faculty participants almost universally believe their students learned more in the hybrid format than they did in the traditional class sections. Instructors reported that students wrote better papers, performed better on exams, produced higher-quality projects, and were capable of more meaningful discussions on course material (Garnham & Kaleta, 2002).

All the project instructors reported having positive experiences with the hybrid model. Some of the comments from the hybrid course instructors include "My students

have done better than I've ever seen; they are motivated, enthused, and doing their best work." "I sense a heightened level of enthusiasm in my students." "Introverts, who are quiet in the face-to-face class, really participate online." "I was tired of hearing myself talk. This gets so much more student interaction" (Garnham & Kaleta, 2002, What did the instructors say? section, para. 2).

Student Responses

For the University of Wisconsin-Milwaukee Hybrid Course Project, students in hybrid courses were asked both qualitative and quantitative assessment questions at the mid-term and again at the end of the semester. The most common and consistent reactions reported by students indicated that they liked the greater convenience afforded by the hybrid course model, which allows coursework to be scheduled flexibly and decreases time spent commuting and finding parking. Students stipulated repeatedly that they liked the hybrid courses flexibility because they like to work at home, which was perceived much more positively than working from other locations (University of Wisconsin Milwaukee Learning Technology Center, n.d.).

Any difficulties with technology occurred at the start of the course. Overall, students responded positively about the use of technology, because they believed that computer skills learned in the hybrid course would help them in the workplace. The substantial majority (80%) of students said they thought the hybrid model was worthwhile and that they would recommend a hybrid course to other students (University of Wisconsin Milwaukee Learning Technology Center, n.d.).

In addition to the above, the student assessments yielded the following data: 69% of the students agreed they could control their own pace of learning, 77% organized their

time better because of the hybrid model, 67% believed the time spent online was better than time spent in class, and 61% believed there should be more hybrid courses available (University of Wisconsin Milwaukee Learning Technology Center, n.d.).

During the University of Wisconsin-Milwaukee Hybrid Course Project, students did identify problems or difficulties with hybrid courses. Students seemed to expect that fewer in-person classes equated to less coursework. Surprisingly, many of the students did not perceive time spent in lectures as “work,” but they definitely did see time spent online as work, even if it is time they would have spent in class in a traditional course. Many students did not have the necessary time-management skills needed in a hybrid course. Time management is crucial in online work, and many students need assistance to learn new skills. Some students were not prepared to take responsibility for their own learning. Because hybrid courses emphasize learning activities that require student responsiveness and participation, those students accustomed solely to traditional lecture formats were unprepared for their new active roles. Finally, the hybrid model is new to students and they do not totally understand its format or goals (University of Wisconsin Milwaukee Learning Technology Center, n.d.).

Many students who have tried hybrid courses say the model fits their attention spans and their lifestyles. “I lose interest in a classroom setting, but meeting 50/50 is nice, it helps keep me in check and also gives me freedom,” wrote Sarah Hangen, a student at Sinclair Community College, in an online discussion as part of a hybrid course. “If I took an all online class I’d probably do poorly and stress myself out by procrastinating,” she added (Young, 2002, A Mixture is Best section, para. 5).

In a study on hybrid courses conducted by Amy SC Leh, an associate professor of instructional technology at a state university in the United States, the results indicated that students were in favor of hybrid courses. The students felt that they learned as much as or more in hybrid courses than in traditional courses and they were more motivated. They wished more hybrid courses were offered in the academic program, and they preferred hybrid courses to traditional courses (Leh, 2002).

In her study, Leh's students listed several benefits of a hybrid course: flexible schedule, being able to work at any time and at any place, and being able to choose the best conditions for learning. The students felt a sense of ownership of their online communities and learned from their peers by observing how their peers hosted the communities. They also mentioned that hybrid courses saved them gas and time on commuting and allowed them more access to the instructor and fellow classmates. Students also identified barriers in a hybrid course. The participants missed face-to-face communication and personal contact. Students with low technology skills felt pressured and anxious. Such pressure and anxiety might create a negative impact on learning. Despite these barriers, students expressed that they would still choose a hybrid course over a traditional one if they had an option (Leh, 2002).

Gender and Education

The research of Belenky, Clinchy, Goldberger, and Tarule (1986), compiled in *Women's Ways of Knowing*, suggests that there are gender-related styles of perceiving, interpreting, and processing information from the environment. Research indicates that females are better able to delay making a decision or arriving at a conclusion about something until they have all the information they require. They are also better able to

wait for a more desirable outcome rather than settle immediately for something less desirable. Males are found to be more flexible, allowing them to shift from inappropriate solutions to alternative approaches that have promise for success. Women tend to react less positively than men to difficult tasks in school and are less likely to take risks (Grossman & Grossman, 1994).

Females tend to be less self-confident than males about school, especially in situations that are in the male domain, such as mathematics, in competitive situations, and when they lack objective information about how well they have done or can do in situations that involve mastery of tasks in the male domain. Females are not less self-confident than males in courses such as English, which is not perceived to be in the male domain, and in situations that involve their perceived ability to develop friendly relationships with others, to resolve conflict with others, or to gain self-insight (Grossman & Grossman, 1994).

Students are found to differ in terms of the extent to which they believe they are in control of, and responsible for, what happens to them in their lives. Studies have found that females are more likely than males to believe that they are in control of their lives. Studies indicate that males and females attribute their academic successes and failures to different factors. Females are more likely to attribute their general academic performance to internal factors. Males' attributions are different. They are more likely to attribute their failures to external factors and their success to internal factors across courses and subjects (Grossman & Grossman, 1994).

Females are found to prefer cooperative learning environments and may learn better in certain kinds of cooperative situations. In group settings, they are more oriented

toward group rather than individual goals. Men respond better to competitive and individualistic situations. In mixed groups, women tend to be equally responsive to requests from and reinforcement by either gender. However, men are responsive primarily to other males. Females are also less likely than males to participate in group discussions and to assume leadership positions. The genders are not equally susceptible to the influence of other people. Women are more likely than men to modify their opinions and attitudes to conform to others and to copy what others model; men tend to maintain their ideas and opinions despite what others may think or feel (Grossman & Grossman, 1994).

Males and females differ in terms of their preferences for learning environments that involve active manipulation versus more sedentary learning, working with others or alone, working independently or with teachers' guidance and instruction, and using computers. In comparison to females, males prefer learning environments that involve working independently, actively manipulating materials, and using computers. In fact, some males achieve more when working on programmed materials and computers than when they are given direct instructions by their teacher. Research has shown that females have more negative attitudes toward computing than males (Proost, Elen, & Lowyck, 1997). As noted by Proost et al., females prefer the traditional formats of educational courses while males show a preference for distance learning. Females prefer teacher explanations and directions and working with people. Females are found to learn better in interpersonal situations while males learn better in impersonal ones. Females' learning is enhanced when they and their teacher are equally involved in the process of examining their experiences together. Women also tend to be more sensitive than men to nonverbal

cues in the classroom. Students, who are sensitive to the teacher's nonverbal communication as well as their verbal communication, may learn more because they perceive more (Grossman & Grossman, 1994).

Conclusion

In the past, the higher education classroom was in many respects an island unto itself, with very little influence from the outside world. Today, as technology and tools for learning and teaching gain more power and accessibility, the barriers of the traditional classroom to outside influence are deteriorating. Technology tools are capable of enhancing teaching and learning and can make increased learning productivity possible if it is coupled with changes in pedagogy and implementation (Berge, 2000; Johnstone, 1992; Oppenheimer, 1997; Twigg, 1992).

Technology, especially learner-centered technology such as hybrid courses, can activate principles of learning theory on both the cognitive and the metacognitive levels (Bonk & Cunningham, 1998). When an instructor creates a technology-enriched learning environment that places tools in the hands of learners to build, browse, link, draw, represent, and summarize information, the learners are engaged in an intentional process of constructing meaning from information and experience (Lehrer, 1993).

Technology-enhanced learning environments can also have a positive influence on student motivation, through factors such as novelty, curiosity, control, personal choice, and effort. These technologies can also allow instructors to diversify course content so that students are exposed to materials from cultures and perspectives different from their own. In addition, technology-enriched learning environments have the

potential to support diverse learners by moving beyond the traditional constraints of time and place (Zhu & Kaplan, 2002).

Wager and McCombs (1995) summarize the potential benefits of technology-enhanced instructional environments. Such environments can provide greater opportunities to experience learning activities that are internally driven and constructed, goal oriented and reflective, personally meaningful and authentic, collaborative and socially negotiated, and adaptive to individual needs and cultural backgrounds.

During a keynote speech at the 14th Annual Conference on Distance Teaching and Learning in Madison, Wisconsin, Elliott Maisie conjectured that perhaps one day learning would “be like air.” With the new web learning paradigm, we can come closer to that reality. Learning no longer has to end when the student leaves the classroom or closes a book. Learning can be a continuous, natural, lifelong process (Boettcher & Conrad, 1999).

CHAPTER III

METHODS AND PROCEDURES

Introduction

The purpose of this dissertation study was to investigate whether students at Valley City State University perceive that hybrid classes, as compared to the traditional face-to-face classes, improve their learning experience through the Seven Principles for Good Practice in Undergraduate Education by Chickering and Gamson. The main variables of this study consist of academic standing, gender, number of hybrid classes taken, interaction between student and faculty, cooperation and interaction among students, active learning, time on task, faculty and student feedback, course expectations, and diverse ways of learning. Additional variables include employment, age, living on or off campus, and academic status. Specifically, this study was designed to collect data to answer the following questions:

1. How did students perceive hybrid classes?
2. Did differences exist between male and female students in the perception of hybrid classes?
3. Was there a relationship between the number of hybrid courses taken and perception of hybrid classes?
4. Did differences exist between academic standing and perception of hybrid classes?

This chapter contains the description of the sample, instruments, and methods used to collect and analyze the data.

Population and Sample

The population for this study included students from Valley City State University that had an average enrollment of 1,002 during the 2002-2003 academic year. According to data received from the registrar of the university approximately 490 of the 1,002 students were enrolled in hybrid classes. Taking into account students may be enrolled in more than one hybrid class, the researcher obtained class lists from the registrar and removed any duplicated names. It was determined that there were approximately 322 different students enrolled in hybrid classes during Spring Semester 2003 at Valley City State University.

The researcher distributed surveys in the following classes, which were not all hybrid classes: Accounting 201, Accounting 202, Computer Information Systems 360, Education 205, Psychology 430, Computer Information Systems 170, Economics 201, Economics 202, Math 103, English 110, Humanities 201, Management 220, Marketing 305, and English 120. It should be noted that the researcher randomly chose these courses to obtain a sample that would consist of freshmen, sophomores, juniors, and seniors. Only students who had taken at least one hybrid class completed a survey. This yielded a sample size of 163 students.

Survey Instrument

The survey instrument used in this study was an adaptation from a survey instrument created by researchers at the University of Central Florida. The survey was not copyrighted and was given to the researcher by Patsy Moskal, Ed.D., to use as a

resource. The questionnaire (see Appendix B) was constructed in various formats of open-ended questions, dichotomous choices with yes or no, and a 17 statement five-point Likert scale from “increased” (5) to “decreased” (1). Survey questions were used to determine students’ demographic information and perceptions of the hybrid classes’ improvement of the learning environment.

A professor at Valley City State University reviewed the research instrument to assess content validity. Her involvement sought to ensure that the directions were clear, the survey was an appropriate length, and all sections were necessary for measuring students’ perceptions of hybrid classes and the learning environment.

Procedure and Design

The researcher obtained permission from the Institutional Review Board at the University of North Dakota in April 2003 to conduct this study. The researcher received permission from various instructors to administer the survey in their classrooms. The researcher personally visited and surveyed 14 classes in the month of May 2003. Following Institutional Review Board (IRB) procedures, students were free to participate in the survey or decline. Confidentiality of students was ensured because no names were recorded on the surveys. A copy of the consent statement distributed and read to students can be found in Appendix A.

Data Analysis

Responses to 17 statements on student perception of hybrid classes in the first section of the survey were reported on a Likert-like scale and were calculated on a five-point scale. For this section, data are reported as percentages by the categories of “increased, somewhat increased, no difference, somewhat decreased, and decreased.”

The differences between genders and the 17 statements in the first section of the survey were reported as percentages. The differences between academic status and the 17 statements in the first section of the survey were reported as means. The relationship between the number of hybrid classes taken and the 17 statements in the first section of the survey are reported as correlation coefficients.

The final section of the survey included open-ended questions soliciting students' opinions about their preference of hybrid classes to traditional classes, approach to learning, likes and dislikes about hybrid classes, and additional comments. Answers to those questions were analyzed by recording all of the student responses, grouping their responses, and determining frequency for each response.

CHAPTER IV

RESULTS

The purpose of this study was to investigate whether students at Valley City State University perceive that hybrid classes, as compared to the traditional face-to-face classes, improved their learning experience through the Seven Principles for Good Practice in Undergraduate Education by Chickering and Gamson. Specifically, this study was designed to collect data to answer the following questions:

1. How did students perceive hybrid classes?
2. Did differences exist between male and female students in the perception of hybrid classes?
3. Was there a relationship between the number of hybrid courses taken and perception of hybrid classes?
4. Did differences exist between academic standing and perception of hybrid classes?

The independent variables of interest included employment status, academic standing, age, gender, academic status, number of hybrid courses taken, and whether students lived on or off campus. The 17 dependent variables encompassed interaction between student and faculty, cooperation and interaction among students, active learning, time on task, faculty and student feedback, course expectations, and diverse ways of learning. This chapter contains the following sections: a description of the sample in

terms of demographic and relevant characteristics, student perception of hybrid courses, comparison between genders on the 17 dependent variables, correlation to evaluate the degree of relationship between student perception of hybrid courses to the number of hybrid courses taken, analysis of variance of academic standing on the 17 dependent variables, and a description of the results obtained from the five open-ended questions on the survey.

Participant Demographic Information

The university used in this study was located in Valley City, North Dakota, with a population of approximately 7,163 (*Valley City North Dakota Resource Guide*, 2003). There were 1,022 students enrolled Fall Semester 2002 and 983 enrolled Spring Semester 2003. Based on class enrollment figures received from the registrar of Valley City State University, approximately 490 students were enrolled in a course Fall Semester that was considered hybrid. After removing duplicated names, it was determined that approximately 322 students were enrolled in at least one hybrid course Fall Semester 2002.

Table 4 shows the demographic information for the 163 participants in this study. The overall sample included slightly more females (51%) than males (49%). The majority of participants worked full time (63%) and were full time students (98%). The participants were distributed by academic standing as follows: freshmen (47%), sophomores (28%), juniors (16%), and seniors (10%). Of the participants, 46% lived off campus.

Table 4. Frequency and Percentages of the Respondents on Demographic Characteristics.

Characteristics	N	%
Employment Status		
Full time	12	7.4
Part time	103	63.2
Not employed	48	29.4
Academic Standing		
Freshman	76	46.6
Sophomore	45	27.6
Junior	26	16.0
Senior	16	9.8
Residence		
Off campus	75	46.0
On campus	88	54.0
Gender		
Male	80	49.1
Female	83	50.9
Academic Status		
Full-time student	160	98.2
Part-time student	3	1.8

Table 5 presents the frequency and percentage of participants according to preference of hybrid courses, change in approach to learning, and number of hybrid courses taken. Of the participants, 73% preferred hybrid courses to traditional face-to-face courses and 40% indicated that the hybrid course structure changed their approach to learning. A number of the participants (41%) had taken one hybrid course while some (7%) had taken six or more.

Table 5. Frequency and Percentages for Student Preference of Hybrid Courses, Approach to Learning, and Number of Courses Taken.

Characteristics	N	%
Preference of Hybrid Courses		
Yes	116	73.4
No	42	26.6
Change in Approach to Learning		
Yes	65	39.9
No	98	60.1
Number of Hybrid Courses Taken		
1	66	41.0
2	37	23.0
3	20	12.4
4	16	9.9
5	11	6.8
6+	11	6.9

Research Question One

How did students perceive hybrid classes? Table 6 presents the results of the participant's perception of hybrid courses and the learning environment. Participants

Table 6. Percentages for Student Perception of Hybrid Courses.

Variables 1-17	Decreased %	Some Decrease %	No Difference %	Some Increase %	Increased %
The amount of interaction with other students.	8.6	25.2	27.6	27.6	11.0
The quality of interaction with other students.	8.6	9.8	42.3	29.4	9.8
The amount of interaction with the instructor.	9.8	39.3	27.6	17.2	6.1
The quality of interaction with the instructor.	7.4	23.3	46.0	17.8	5.5
The amount of feedback received from other students.	.6	8.0	19.6	44.2	27.6
The amount of feedback received from the instructor.	4.3	11.0	32.5	38.7	13.5
The promptness of the feedback received from the instructor.	2.5	9.8	35.6	36.2	16.0
The promptness of the feedback received from other students.	1.8	7.4	35.6	38.7	16.6
The amount of time actively participating in the course.	4.9	16.6	30.7	30.7	17.2
The amount of responsibility for own learning.	0.0	3.1	15.3	31.9	49.7
The amount of time for work and other responsibilities.	1.2	6.7	32.5	38.0	21.5

Table 6 cont.

Percentages for Student Perception of Hybrid Courses.

Variables 1-17	Decreased %	Some Decrease %	No Difference %	Some Increase %	Increased %
The amount of control over learning.	1.2	4.3	17.8	36.2	40.5
The ability to complete tasks at convenient times.	.6	5.5	9.8	31.9	52.1
The chance to get to know students who are different.	5.5	19.6	38.0	20.2	16.6
The quality of work.	1.8	9.2	49.7	27.6	11.7
The amount of educational resources available.	0.0	4.9	38.0	34.4	22.7
The chance to get to know students who are different.	5.5	19.6	38.0	20.2	16.6
The quality of work.	1.8	9.2	49.7	27.6	11.7
The amount of educational resources available.	0.0	4.9	38.0	34.4	22.7
The ability to better understand ideas taught in a course.	4.9	16.6	42.3	28.2	8.0

were asked to indicate how the hybrid course model, compared to the traditional face-to-face model, affected the 17 statements associated with student perception of the learning environment. Percentages were calculated for each of the 17 statements associated with student perception of the learning environment. Of the 17 items on

hybrid courses, students felt the amount of interaction with other students increased (11%) or somewhat increased (28%), while 28% of the students felt there was no difference. The quality of interaction with other students was noted by those surveyed as having increased (10%) or somewhat increased (29%), while 42% of the students felt there was no difference in the quality of interaction. The amount of interaction with the instructor was felt to have increased (6%) or somewhat increased (17%); however, more students (39%) felt the amount of interaction with the instructor somewhat decreased. The quality of interaction with the instructor was seen as increased (6%) or somewhat increased (18%) with 46% of the students indicating there was no difference. The amount of feedback received from other students increased (28%) or somewhat increased (44%) as the amount of feedback received from the instructor also increased (14%) or somewhat increased (39%). The promptness of the feedback received from other students increased (16%) or somewhat increased (39%), while a number of students (36%) felt there was no difference. The promptness of the feedback received from the instructor increased 16% and somewhat increased by 36%, although 36% of the students felt there was no difference because it was a hybrid.

Students indicated that the amount of time they actively participated in the course because it was hybrid increased (17%) or somewhat increased (31%). Another 31% of the students felt there was no difference in the amount of time they actively participated. Students also indicated that the amount of responsibility for their own learning dramatically increased (50%) or somewhat increased (32%), and the amount of control they had over learning also dramatically increased (41%) or somewhat increased (36%). Students felt the amount of time for work and other responsibilities increased (22%) or

somewhat increased (38%) because of the reduction of classroom “seat time.” However, another 33% felt there was no difference in the amount of time for work and other responsibilities. Students indicated that their ability to complete tasks (homework) at convenient times increased (52%) or somewhat increased (32%), while their quality of work only increased (12%) or somewhat increased (28%). Half the students (50%) indicated their quality of work did not change as a result of the course being a hybrid.

With regard to diversity, students felt the chance to get to know other students who were different increased (17%) or somewhat increased (20%) as a result of the course being hybrid. Another 38% felt that there was no difference. The ability to better understand ideas taught in a course because of the diverse teaching methods increased by 8% or somewhat increased by 28%. Here again, 42% of the students felt there was no difference. The amount of educational resources available to students in a hybrid course was seen as having increased by 23% or somewhat increased by 28%. Again, another 38% indicated there was no difference in the amount of educational resources available.

Research Question Two

Did differences exist between male and female students in the perception of hybrid classes? The sample for this study was almost evenly distributed between males (49%) and females (51%) as can be seen in Table 4. Of interest to this study were the differences between male and female participants on the 17 dependent variables of student perception toward hybrid courses. Pearson’s Chi Square was used to compare the two groups; the results are presented in Table 7. Four of the items were found to be significantly different by gender ($p < .05$).

Table 7. Percentage of Differences Between Gender and Perception of Hybrid Course.

Items 1-17	Gender	% DE	% SD	% ND	% SI	% IN	Chi Sq	Sig.
The amount of interaction with other students.	M	71.4	31.7	57.8	57.8	27.8	13.74	.008
	F	28.6	68.3	42.2	42.2	72.2		
The quality of interaction with other students.	M	64.3	50.0	40.6	64.6	25.0	11.62	.020
	F	35.7	50.0	59.4	35.4	75.0		
The amount of interaction with the instructor.	M	50.0	35.9	71.1	42.9	50.0	13.61	.009
	F	50.0	64.1	28.9	57.1	50.0		
The quality of interaction with the instructor.	M	41.7	39.5	46.7	65.5	66.7	6.09	.192
	F	58.3	60.5	53.3	34.5	33.3		
The amount of feedback received from other students.	M	100.0	46.2	53.1	47.2	48.9	1.39	.846
	F	0.0	53.8	46.9	52.8	51.1		
The amount of feedback received from the instructor.	M	42.9	44.4	45.3	49.2	63.6	2.44	.656
	F	57.1	55.6	54.7	50.8	36.4		
Promptness of the feedback received from the instructor.	M	25.0	68.8	48.3	45.8	50.0	3.68	.450
	F	75.0	31.3	51.7	54.2	50.0		
Promptness of the feedback received from other students.	M	100.0	41.7	50.0	50.8	40.7	4.22	.377
	F	0.0	58.3	50.0	49.2	59.3		
The amount of time actively participating in the course.	M	62.5	63.0	58.0	42.0	28.6	9.97	.041
	F	37.5	37.0	42.0	58.0	71.4		
The amount of responsibility for own learning.	M	0.0	60.0	64.0	50.0	43.2	3.60	.308
	F	0.0	40.0	36.0	50.0	56.8		

Table 7 cont.

Percentage of Differences Between Gender and Perception of Hybrid Course.

Items 1-17	Gender	% DE	% SD	% ND	% SI	% IN	Chi Sq	Sig.
The ability to complete tasks at convenient times.	M	100.0	55.6	43.8	51.9	47.1	1.68	.795
	F	000.0	44.4	56.3	48.1	52.9		
The chance to get to know students who are different.	M	66.7	43.8	48.4	60.6	37.0	4.81	.307
	F	33.3	56.3	51.6	39.4	63.0		
The quality of work.	M	33.3	73.3	46.9	42.2	57.9	5.42	.247
	F	66.7	26.7	53.1	57.8	42.1		
The amount of educational resources available.	M	0.0	50.0	54.8	50.0	37.8	2.72	.438
	F	0.0	50.0	45.2	50.0	62.2		
Ability to better understand ideas taught in a course.	M	50.0	37.0	52.2	50.0	53.8	1.97	.742
	F	50.0	63.0	47.8	50.0	46.2		

(DE=Decreased, SD=Some Decrease, ND=No Difference, SI=Some Increase, IN=Increased)

Item one, the amount of interaction with other students, was significant ($p=.008$).

The males (71%) who participated in the study felt the amount of interaction with other students decreased; the females (72%) felt interaction actually increased as a result of the hybrid course model. Item two, the quality of interaction with other students, was significant ($p=.020$). The males (64%) felt the quality of interaction with other students decreased as a result of the hybrid course model. The females (75%), just opposite of the males, felt the quality of interaction with other students increased. The amount of interaction with the instructor, item three, was also significant ($p=.009$). Male

participants (71%) felt the amount of interaction with the instructor did not change as a result of the course being offered using a hybrid model. The female participants (64%) felt there was some decrease in the amount of interaction with the instructor. Item nine, the amount of time actively participating in the course, produced significant results ($p=.041$). The male participants (63%) indicated that the amount of time actively participating in the course decreased, while the female participants (71%) indicated the amount of time actively participating in the course increased.

Research Question Three

Was there a relationship between the number of hybrid courses taken and perception of hybrid classes? Bivariate correlation was used to evaluate the degree of relationship between student perception and the number of hybrid courses taken. Table 8 presents the results. Of the 17 items dealing with student perception, the third item, the amount of interaction with the instructor ($p=.026$); the ninth item, the amount of time actively participating in the course ($p=.004$); the tenth item, the amount of responsibility for own learning ($p=.035$); the eleventh item, the amount of time for work and other responsibilities ($p=.007$); and the seventeenth item, the ability to better understand ideas taught in a course ($p=.016$) were significant at the .05 level.

As indicated in Table 8, the amount of interaction with the instructor and number of hybrid courses taken resulted in a slight positive correlation ($r=.176$). The amount of time actively participating in the course and the amount of time for work and other responsibilities both registered a modest positive correlation ($r=.227$, $r=.214$) with the number of hybrid courses taken. There was a slight positive correlation between the amount of responsibility for one's own learning ($r=.166$) and the number of hybrid

Table 8. Correlation Between Number of Hybrid Courses Taken and Student Perception.

Items on Student Perception	Correlation	Sig.
1. The amount of interaction with other students.	.126	.112
2. The quality of interaction with other students.	.141	.075
3. The amount of interaction with the instructor.	.176	.026
4. The quality of interaction with the instructor.	.130	.100
5. The amount of feedback received from other students.	.129	.102
6. The amount of feedback received from the instructor.	.147	.063
7. Promptness of the feedback received from the instructor.	.118	.136
8. Promptness of the feedback received from other students.	.030	.702
9. The amount of time actively participating in the course.	.227	.004
10. The amount of responsibility for own learning.	.166	.035
11. The amount of time for work and other responsibilities.	.214	.007
12. The amount of control over learning.	.064	.423
13. The ability to complete tasks at convenient times.	.147	.063
14. The chance to get to know students who are different.	.111	.160
15. The quality of work.	.045	.567
16. The amount of educational resources available.	.140	.077
17. Ability to better understand ideas taught in a course.	.190	.016

courses taken. The correlation between the ability to better understand ideas taught in a course and the number of hybrid courses taken was slight ($r=.190$).

Research Question Four

Did differences exist between academic standing and perception of hybrid classes? To investigate if differences existed among freshmen, sophomores, juniors, and seniors on student perception of hybrid courses, a one-way ANOVA was conducted. Significant differences among the means were found ($p < .05$) and are presented in Table 9. A post hoc test using the Bonferroni criterion was conducted to identify where the differences occurred among the four levels of academic standing on each of the 17 items analyzing student perception. Significant differences between the groups were found on item three, the amount of interaction with the instructor ($F = 5.74$, $p = .001$); item four, the quality of interaction with the instructor ($F = 4.44$, $p = .005$); and item twelve, the amount of control over learning ($F = 3.42$, $p = .019$).

Table 9. ANOVA Results for Academic Standing and Perception of Hybrid Courses.

Items on Student Perception	FR Mean	SO Mean	JR Mean	SR Mean	F-ratio	Sig.
1. The amount of interaction with other students.	2.97	3.04	3.27	3.31	.681	.565
2. The quality of interaction with other students.	3.15	3.11	3.42	3.50	.967	.410
3. The amount of interaction with the instructor.	2.49	2.80	2.61	3.62	5.74	.001
4. The quality of interaction with the instructor.	2.76	2.84	2.96	3.69	4.44	.005
5. The amount of feedback received from other students.	3.87	3.82	3.92	4.25	.917	.434
6. The amount of feedback received from the instructor.	3.36	3.47	3.42	4.00	1.87	.137

Table 9 cont.

ANOVA Results for Academic Standing and Perception of Hybrid Courses.

Items on Student Perception	FR Mean	SO Mean	JR Mean	SR Mean	F-ratio	Sig.
7. Promptness of the feedback received from the instructor.	3.54	3.56	3.54	3.44	.062	.980
8. Promptness of the feedback received from other students.	3.67	3.51	3.61	3.56	.300	.825
9. The amount of time actively participating in the course.	3.18	3.58	3.42	3.75	1.93	.127
10. The amount of responsibility for own learning.	4.19	4.27	4.27	4.75	1.98	.120
11. The amount of time for work and other responsibilities.	3.72	3.49	3.92	4.00	1.90	.133
12. The amount of control over learning.	4.12	4.07	3.77	4.69	3.42	.019
13. The ability to complete tasks at convenient times.	4.38	4.07	4.23	4.63	1.99	.118
14. The chance to get to know students who are different.	3.18	3.18	3.38	3.31	.268	.848
15. The quality of work.	3.30	3.40	3.35	3.75	1.17	.322
16. The amount of educational resources available.	3.66	3.64	3.88	4.25	2.59	.055
17. Ability to better understand ideas taught in a course.	3.09	3.16	3.27	3.50	.872	.457

For item three, the amount of interaction with the instructor, differences were found between freshmen and seniors with a mean difference of -1.1382 ($p=.000$), sophomores and seniors with a mean difference of -.8250 ($p=.035$), and juniors and seniors with a mean difference of -1.0096 ($p=.013$). Of the four levels of academic

status, seniors ($M=3.62$) scored significantly higher on item three than the other three groups: sophomores ($M=2.80$), juniors ($M=2.61$), and freshmen ($M=2.49$). This indicates that seniors felt the amount of interaction with the instructor increased more as a result of the course being hybrid than did freshmen, sophomores, and juniors.

The differences for item four, the quality of interaction with the instructor, occurred between freshmen and seniors with a mean difference of $-.9243$ ($p=.002$) and sophomores and seniors with a mean difference of $-.8431$ ($p=.013$). There was no significant difference found between juniors and seniors ($p=.092$). The seniors scored significantly higher ($M=3.69$) than sophomores ($M=2.84$) and freshmen ($M=2.76$). This indicates that seniors felt the quality of interaction with the instructor somewhat increased as a result of a course being offered hybrid. Sophomores and freshmen both felt this to a lesser degree.

Item twelve, the amount of control over learning, showed a difference existed between juniors and seniors with a mean difference of $-.9183$ ($p=.010$). Once again, seniors scored significantly higher ($M=4.69$) than juniors ($M=3.77$). This indicates seniors felt the amount of control over learning increased as a result of a course being offered hybrid more than did juniors.

Open-Ended Questions

On the survey instrument, participants were asked to respond to five open-ended questions. The first question asked participants if they preferred hybrid classes to traditional face-to-face classes and to explain why they felt that way. The responses and frequencies to those who answered “yes” are presented in Table 10 in order of frequency.

Table 10. Yes Responses to Preference of Hybrid Courses and Frequencies.

Responses	Frequency
Allows you to complete coursework at your own convenience.	46
Allows students more time for other activities.	19
More interaction with others.	10
Do not have to meet all the time as a class.	8
Feel more responsible for own learning.	8
Freedom.	7
Easier to express your ideas because you are not face-to-face.	6
Enjoy working alone.	5
Like to self teach.	3
Gives you a chance to meet with the teacher if you have questions.	2
Saves time commuting.	2
Convenient.	2
Great new way to learn.	2
Something different and more interesting.	2
More research is involved.	2
Can take more credits and still have time to complete work.	1
Learned more.	1
Can communicate better through e-mail with students and instructor.	1
Became more fluent with computer programs.	1

Table 10 cont.

Yes Responses to Preference of Hybrid Courses and Frequencies.

Responses	Frequency
Get responses back quickly.	1
Can submit work any time.	1
Less pressure.	1
Easier to take online classes living off campus.	1
Learned just as much in a face-to-face course.	1
More feedback from other students.	1
Saves time.	1

The responses and frequencies to those who answered “no” are presented in Table 11 in order by frequency.

A total of 26 different responses were indicated by the 163 participants in this study as to why they preferred hybrid classes to traditional face-to-face classes. Multiple responses to the open-ended questions were double counted. The highest response (46) indicated students preferred a hybrid class because it allowed them to complete their work at their own convenience. Nineteen students also indicated they had more time for other activities. More interaction with others was another common response (10), as well as not having to meet all the time (8) and feeling more responsible for their own learning (8). Seven students perceived that hybrid classes offer them more freedom. Six students felt it was easier to express their own ideas because they were not face-to-face. Five

Table 11. No Responses to Preference of Hybrid Courses and Frequencies.

Responses	Frequency
Like classroom and face-to-face interaction.	7
Like to hear it not read it.	5
Confusing at times.	3
Can ask questions in class.	3
No teacher-student relationship.	3
Instruction is needed to explain things.	3
Like being in class with other students.	3
Learn more face-to-face.	2
Learn better when taught in person by the instructor.	2
Don't learn well in hybrid classes.	2
Not much is learned and you miss out on a lot.	2
Cold and impersonal.	1
Need to be able to see the teacher, not e-mail.	1
Teacher in person in the classroom is more informative.	1
Lose contact with the teacher.	3
Must be responsible to take these classes.	1
Sometimes unsure of myself.	1
Hybrid classes are a waste of time.	1
Can form a better relationship with the teacher and students face-to-face.	1

Table 11 cont.

No Responses to Preference of Hybrid Courses and Frequencies.

Responses	Frequency
Easy to forget and put stuff off.	1
Traditional classes are more organized.	1
Instructors should teach instead of calling a discussion board topic a day's worth of work.	1
Harder for quality of work to stay high.	1
Hard to do your work on your own time.	1

students indicated they enjoyed working alone, while three students indicated they liked to self teach.

Those students who did not prefer a hybrid class compared to a traditional class listed 24 different responses as to why. The highest response (7) liked the classroom setting and face-to-face interaction. Five students indicated that they liked to hear the course information rather than read it. Some students (3) felt a hybrid class could be confusing at times. Another three students liked the traditional class because they could directly ask questions of the instructor. According to three students, the teacher-student relationship did not exist in a hybrid class. Three students preferred the traditional class because the instructor was there to explain things. Some students (3) just liked being in the class with other students.

The second open-ended question asked participants if they felt their approach to learning had changed as a result of taking a hybrid class. If they felt it had, participants

were asked to elaborate. Table 12 presents their responses. Of the 163 participants in the study, 17 students felt their approach to learning changed because they developed more responsibility for their own learning. Fourteen students learned to work independently as a result of taking a hybrid class. Four students learned from others through interacting together online. Another four students learned to gather their own information for class. Three students developed a better understanding of technology.

Table 12. Changes in Approach to Learning as a Result of Hybrid Classes and Frequencies.

Changes	Frequency
Developed more responsibility for learning.	17
Learned to work independently.	14
Learned from others through interacting online.	4
Learned to gather information.	4
Developed a better understanding of technology.	3
Made better use of time.	1
Discovered self-learning limits.	1
Learned out-of-class learning is as important as in-class learning.	1
Better able to choose how information is learned.	1
Learned to better prepare before responding.	1
Became less involved in class discussion.	1

The third open-ended question asked participants to share what they liked most about hybrid classes. Their responses are presented in Table 13. Of the 163 participants

Table 13. Responses: What Students Liked Most About Hybrid Classes and Frequencies.

Responses	Frequency
Work on coursework at own time and pace.	53
Do not have to physically meet in class all the time.	51
Freedom that goes along with hybrid classes.	22
Interaction with other students.	9
Responsibility for own learning.	8
Convenience.	7
More time for other activities.	6
Resources are available all the time.	4
Time is easier to manage.	3
Can work ahead.	3
A change from the traditional face-to-face class.	3
Ability to learn on our own in our own way.	3
View other students' opinions.	3
More comfort voicing opinion.	2
Opportunity to gather information via Internet.	2
Can check grades online.	1
Responsiveness of the instructor.	1
Interaction with the teacher.	1
Can think more about the topic before responding.	1

Table 13 cont.

Responses: What Students Liked Most About Hybrid Classes and Frequencies.

Responses	Frequency
Learn by doing.	1
More relaxed atmosphere.	1
Easier to submit assignments.	1
Instructor depends on students to complete the work.	1
Can access assignments easier.	1
Can contact instructor through e-mail.	1

in the study, 25 different responses were given as to what students liked most about hybrid classes. The highest response (53) was being able to complete coursework at their own time and pace. Not having to physically meet as a class all the time was the second most favored (51) response about hybrid classes. Students (22) enjoyed the freedom that goes along with hybrid classes. Nine students enjoyed the interacting with other students in the hybrid class. A few students (8) liked the responsibility they were given for their own learning. Seven students indicated hybrid classes are more convenient, and six students indicated hybrid classes allowed more time for other activities. The availability of resources at any time was another response four students indicated.

The fourth open-ended question asked students what they liked least about hybrid classes. Their responses are presented in Table 14. Of the 163 participants in the study, the most common dislike (26) was the decrease in personal face-to-face interaction in the

Table 14. Responses: What Students Disliked Most About Hybrid Classes and Frequencies.

Responses	Frequency
Less face-to-face personal interaction.	26
Less contact with the teacher.	20
Not being able to ask the instructor a question right away; must wait for response.	17
Sometimes confusing causing uncertainty.	11
Remembering to do assignments on time.	8
Not having in-depth explanation on areas that are confusing.	7
Don't get to know other students as well.	5
Learn less about the subject.	4
More responsibility for own learning.	4
Forget there is a meeting time.	3
Less teacher input.	3
Not as much teaching by instructor.	2
Learning on my own.	2
Different way of learning than students are accustomed to.	2
Online accessibility is not always as good off campus.	2
More writing and research is involved.	2
Difficult if computer has problems.	2
Based more on student feedback.	2

Table 14 cont.

Responses: What Students Disliked Most About Hybrid Classes and Frequencies.

Responses	Frequency
Poor excuse to not have class.	1
Material is not posted early enough by the instructor to allow students to finish on time.	1
Don't like to reply to other students' comments.	1
Not able to hear the teacher teach.	2
Grading can be unfair.	1
Online material doesn't relate to class.	1
Schedule can change and complicate things.	1
Constantly having to check into Blackboard.	1
Less student effort.	1
Teacher relies too much on the Internet and Blackboard.	1

classroom. Twenty students felt there is less contact with the teacher in a hybrid class, while 17 students disliked hybrid classes because the teacher was not there to answer questions. A few students (11) sometimes felt the online learning environment was confusing and caused uncertainty. Eight students indicated they would sometimes forget to do their online assignments. Students (7) disliked hybrid classes because in-depth explanations were not available on areas they found confusing. Five students felt they did not get to know other students as well in a hybrid class. Four students perceived they

learned less about the subject as a result of the course being hybrid. Four students also indicated that they disliked the added responsibility for their own learning.

The final open-ended question asked students if they had any additional comments to share. Their responses are presented in Table 15. Few responses were given to this question. This is attributed to the placement of the question on the survey instrument. The most frequent response (6) indicated students would like to see more hybrid courses offered. Students (5) thought hybrid courses were great and should continue to be offered. Non-traditional students (2) felt hybrid classes were critical to their education.

Table 15. Additional Comments on Hybrid Classes and Frequencies.

Comments	Frequency
Wish there were more hybrid courses offered.	6
Hybrid courses are great/good and should be kept.	5
Hybrid classes are critical to the non-traditional student.	2
Hybrid classes can be good, but they do not increase student learning.	1
This was a good learning experience.	1
Good way of learning if students will always work hard.	1
Hybrid classes can be effective if the teacher writes well and explains things well.	1
Highly recommend this kind of course because they help the students realize how involved in class they should be.	1

Summary

In summary, the majority of students who were surveyed for this study preferred hybrid classes to traditional face-to-face classes. The most prominent reasons were the students' ability to complete coursework at their own convenience, the increased time for other activities, not having to physically meet all the time, the increased interaction with others, and the freedom that goes along with hybrid classes. Student responses were favorable toward hybrid courses and their learning experience. The hybrid course model enhanced the students' perception of their learning experience through the increase in the amount and promptness of feedback between students and between students and the instructor. In addition, students perceived more control and a sense of responsibility for their own learning.

Overall, the males who participated in this study perceived a decrease in the amount of interaction with other students, the quality of interaction with other students, and the amount of time actively participating in the course. However, the females in this study perceived an increase in the amount of interaction with other students, the quality of interaction with other students, and the time actively participating in the course. Males felt the amount of interaction with the instructor did not change while the females perceived a decrease.

Correlation results for research question three indicate a relationship exists between the number of hybrid courses taken and the amount of interaction with the instructor, the amount of time actively participating in the course, the amount of time for work and other responsibilities, the amount of responsibility for one's own learning, and the ability to better understand ideas taught in a course.

Differences were found to exist among freshmen, sophomores, juniors, and seniors on student perception of hybrid courses. Seniors felt the amount of interaction with the instructor increased more as a result of the course being hybrid than did freshmen, sophomores, and juniors. Seniors felt the quality of interaction with the instructor increased as a result of a course being offered hybrid; sophomores and freshmen felt this to a lesser degree. Seniors in this study also felt the amount of control over learning increased as a result of a course being offered hybrid more than did juniors.

CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

This chapter contains a summary of the purpose of the study, research questions, and participants. Following the summary are the conclusions and recommendations.

Summary

Advances in computer software and hardware, the prevalence of computers on and off campus, and easy access to the Internet are providing the fuel for changes in teaching and learning. As colleges and universities re-examine traditional teaching methods, educators concentrate on a question that has fueled pedagogical debates for years: What are the most effective strategies for delivering instruction to an increasingly diverse student population? This question today takes on an added complexity because the answers involve more options with improved technology. Many university students are computer proficient and have the technology available to manage online classes (Moskal & Dziuban, 2001). These advances facilitate hybrid courses where students are not required to spend as much time in traditional face-to-face classes.

The purpose of this study was to identify whether students at Valley City State University perceive that hybrid classes, as compared to the traditional face-to-face classes, improve their learning experience through the Seven Principles for Good Practice in Undergraduate Education by Chickering and Gamson. Research questions guiding this study included the following:

1. How did students perceive hybrid classes?
2. Did differences exist between male and female students in the perception of hybrid classes?
3. Was there a relationship between the number of hybrid courses taken and perception of hybrid classes?
4. Did differences exist between academic standing and perception of hybrid classes?

A survey constructed for this study was distributed to students at Valley City State University. A total of 163 surveys were completed. Of the respondents, 76 were freshmen, 45 were sophomores, 26 were juniors, and 16 were seniors. The sample consisted of 80 males and 83 females. At the time of the survey, 116 students (73%) indicated they preferred a hybrid class to a traditional face-to-face class and 40% indicated their approach to learning changed as a result of a hybrid class. Of the respondents, 66 students (41%) had taken one hybrid course, 37 students (23%) had taken two hybrid courses, 20 students (12%) had taken three hybrid courses, 16 students (10%) had taken four hybrid courses, 11 students (7%) had taken five hybrid courses, and 11 students (7%) had taken six or more hybrid courses.

Conclusions

The perception of hybrid classes by students at Valley City State University was investigated under research question one. The questions on the survey instrument for this study were developed to analyze student perception of the learning environment through the Seven Principles for Good Practice in Undergraduate Education by Chickering and Gamson. The first principle encourages contact between students and faculty. According

to the research by Chickering and Ehrmann (1996) and Garnham and Kaleta (2002), the use of technology and the hybrid course model strengthen faculty interactions with all students. The findings of this study, however, concluded that, based on student perception, the amount of interaction with the instructor in a hybrid course versus a traditional course somewhat decreased while the quality of interaction with the instructor did not change. These findings may be the result of how faculty at Valley City State University conduct their hybrid classes. The online part of the hybrid course might consist of the instructor posting a question for students to discuss with little or no instructor involvement, as noted by a student in one of the open-ended questions of the survey. These findings may also be the result of the “newness” of hybrid courses on campus. Students are accustomed to the traditional classroom, seeing and interacting with the instructor in person.

The second principle for good undergraduate education encourages cooperation among students. The biggest success story in the realm of technology has been that of time-delayed (asynchronous) communication. The use of e-mail, computer conferencing, and the World Wide Web increases opportunities for students to converse and exchange work quickly (Chickering & Ehrmann, 1996). Faculty offering hybrid courses have noted increased interaction and contact among their students (Garnham & Kaleta, 2002). According to Bleed (2001), the greatest potential of the hybrid model is in the direct influences on socialization. Students in this study concluded that the amount of interaction and quality of interaction with other students did not change as a result of the course being hybrid. Valley City State University is a laptop university. Students are familiar with technology and do a vast amount of their communicating online. Hence,

that may be one reason why students perceive no change in the amount of interaction they have with students in a hybrid course.

The third principle for good undergraduate education encourages active learning. According to the literature, technology and the hybrid course model encourage active learning (Chickering & Ehrmann, 1996; Garnham & Kaleta, 2002; Young, 2002; Zhu & Kaplan, 2002). Students in this study felt the amount of time they actively participated in the course did not change as a result of the course being hybrid. Again, this may be the result of Valley City State University being a laptop university. A majority of the instructors at VCSU already incorporate technology into the traditional classroom. Other than not meeting all the time, students may not note any difference between a traditional class and a hybrid class. Another item that may have contributed to these results could be the way the instructor designed the hybrid course.

The fourth principle for good practice in undergraduate education encourages prompt feedback. Students need frequent opportunities to perform and receive feedback on their performance. The use of technology can provide feedback in many ways quickly (Chickering & Ehrmann, 1996). According to the findings in this study, students indicated the amount of feedback from other students and the instructor increased somewhat as a result of the course being hybrid. Students also indicated that the promptness of the feedback received both from the instructor and from other students also somewhat increased.

The fifth principle for good practice in undergraduate education emphasizes time on task. Learning to manage one's time is critical for students. Technology can dramatically improve time on task for students by making studying more efficient

(Chickering & Ehrmann, 1996). Hybrid courses reduce the amount of time students who live off campus must commute (Bleed, 2001; Garnham & Kaleta, 2002; Young, 2002), are flexible (Bleed, 2001; Garnham & Kaleta, 2002), and allow time for other responsibilities (Brown, 2002; Zeller, 2001). Over half the students in this study indicated that hybrid courses increased their ability to complete tasks at a time that was convenient for them. Students also indicated hybrid courses somewhat increased the amount of time for work and other responsibilities.

The sixth principle for good practice in undergraduate education emphasizes the communicating of high expectations. High expectations are important for everyone. Technology can help communicate high expectations explicitly and efficiently. Problem solving and conflicting perspectives can drive students to acquire information and sharpen their cognitive skills of analysis, synthesis, application, and evaluation. With technology, criteria for evaluating products and performances can be more clearly articulated by the teacher or generated collaboratively with students (Chickering & Ehrmann, 1996). Bialo and Siven (1990) indicate that when technology is used appropriately it can positively impact student achievement. Researchers have been comparing results in hybrid courses with traditional, face-to-face and fully online courses (Brown, 2002; Sands, 2002). Students enrolled in hybrid courses have the highest success rate (Brown, 2002; Garnham & Kaleta, 2002). Garnham and Kaleta (2002) reported that students wrote better papers, performed better on exams, produced higher-quality projects, and were capable of more meaningful discussions. The findings in this study indicate that students felt there was no difference in the quality of their work as a result of a course being hybrid. There was, however, an increase in the amount of

control students felt over their learning. Half the students indicated that the amount of responsibility for their own learning increased as a result of the hybrid course model.

The seventh principle for good practice in undergraduate education emphasizes respect for diverse talents and ways of learning. Many roads lead to learning. Different students bring different talents and styles to college. Students need opportunities to show their talents and learn in ways that work for them. Technologies can help students learn in ways they find most effective and broaden their repertoires for learning (Chickering & Ehrmann, 1996). The benefits of technology-enhanced instructional environments can provide greater opportunities to experience learning activities that are adaptive to individual needs and cultural background (Wager & McCombs, 1995; Zhu & Kaplan, 2002). The results of this study lack the necessary information to determine whether hybrid courses enhanced students' respect for diverse talents and ways of learning. Students in this study indicated that the chance to get to know other students who were different did not change as a result of the course being hybrid. This result is of no surprise. Valley City State University does not have a diverse student population. Students in this study also indicated that the amount of educational resources available to them as a result of a course being offered as a hybrid did not change. The researcher speculates this may be the result of Valley City State University being a laptop university. Students are used to resources being available to them online. Another item that may have contributed to these results could be the way the instructor designed the hybrid course. In conclusion to research question one, students in this study felt their ability to better understand ideas taught in the course did not change as a result of the course being offered as a hybrid.

The differences between male and female students at Valley City State University and their perception of hybrid courses were investigated under research question two. Male students indicated that the amount of interaction with other students greatly decreased as a result of the hybrid course model. Females, on the other hand, felt the amount of interaction with other students overwhelmingly increased. This difference may stem from the belief that females are found to prefer cooperative learning environments and may learn better in certain kinds of cooperative situations. In group settings, they are more oriented toward group rather than individual goals. In contrast, male students prefer to learn independently (Grossman & Grossman, 1994). Many of the hybrid courses at Valley City State University are designed to encourage discussion among students.

With respect to the quality of interaction with other students, male students felt the quality of interaction with other students decreased as a result of the hybrid course model. Female students, just opposite of the males, felt the quality of interaction with other students increased. Females are found to learn better in interpersonal situations while males learn better in impersonal ones (Grossman & Grossman, 1994).

Male and female students also differed on their response to the amount of interaction with the instructor in a hybrid course. Male students indicated there was no change in the amount of interaction between the instructor, whereas female students felt the amount of interaction with the instructor somewhat decreased as a result of the course being offered hybrid as compared to traditional. In comparison to females, males achieve more when working on programmed materials and computers than when they are given direct instructions by their teacher (Grossman & Grossman, 1994). As noted by Proost

et al. (1997), females prefer the traditional formats of educational courses while males show a preference for distance learning. Females prefer teacher explanations and directions and working with people. Women also tend to be more sensitive than men to nonverbal cues in the classroom. Students, who are sensitive to the teacher's nonverbal communication as well as their verbal communication, may learn more because they perceive more (Grossman & Grossman, 1994). Taking male and female preferences into consideration, the reason female students in this study found a decrease in the amount of interaction with the instructor probably stems from the belief that women prefer the traditional classroom with direct contact with the instructor and other students.

With respect to the amount of time actively participating in the course, male students felt the amount of time actively participating in the course decreased as a result of it being offered as a hybrid. Female students felt the amount of time actively participating in the course actually increased. Males and females differ in terms of their preferences for learning environments that involve active manipulation versus more sedentary learning, working with others or alone, and working independently or with teachers' guidance and instruction. In comparison to females, males prefer learning environments that involve working independently and actively manipulating materials (Grossman & Grossman, 1994). Given the design of hybrid courses, the differences between males and females can be expected. Hybrid courses at Valley City State University are designed to encourage discussion among students which involves working cooperatively.

The relationship between the number of hybrid courses taken and student perception of hybrid courses at Valley City State University was investigated under

research question three. The findings for this study indicate there is a relationship between the amount of interaction with the instructor, the amount of time actively participating in the course, the amount of responsibility for one's own learning, and the amount of time for work and other responsibilities with respect to the number of hybrid courses taken. One can only speculate the reasons for these results. In general, people tend to adjust to situations and become more familiar with them as a result of repetition and learning from previous experiences.

The differences between academic standing and perception of hybrid courses by students at Valley City State University were investigated under research question four. The findings indicate that differences do exist between the amount of interaction with the instructor, the quality of interaction with the instructor, and the amount of control over learning and academic standing. Seniors felt the amount of interaction with the instructor somewhat increased as a result of the course being hybrid, whereas freshmen, sophomores, and juniors did not. Seniors also felt the quality of interaction with the instructor somewhat increased as a result of a course being offered hybrid. Sophomores and freshmen both felt this to a lesser degree. Once again, seniors felt the amount of control over learning increased as a result of a course being offered hybrid more than did juniors. In all three situations, seniors noted increases. This may stem from their maturity level, familiarity with hybrid courses, relationships developed with faculty, or familiarity with the university setting in general.

Recommendations

The findings of this study generated a number of recommendations relative to hybrid courses and education. The recommendations will be described in the following paragraphs.

For comparative purposes, it is recommended that research similar to this study be completed at other universities to explore similarities and differences. Also of interest would be the results of this study duplicated at another university that is not considered a laptop university. The overall effect of the findings for this study may be caused by the laptop initiative at VCSU.

Students in this study were in favor of hybrid courses. Research similar to this study involving faculty perceptions of hybrid courses would be beneficial. One would assume that faculty teaching strategies, biases, and experience with technology would have a direct impact on students enrolled in their hybrid courses.

Research in the area of academic standing and perception of hybrid courses does not exist. This study found differences do exist between the amount of interaction with the instructor, the quality of interaction with the instructor, and the amount of control over learning and academic standing. As one's academic standing advances from level to level, so does age and maturity. It is recommended that further research be conducted focusing on academic standing and perception of hybrid or online courses to pinpoint why differences exist.

As indicated in this study, gender does make a difference as to how students perceive hybrid courses. Females, compared to males, seem to favor hybrid courses. The

question that still remains to be answered is why? This study lends itself to further research on gender.

This study did not attempt to measure student learning in hybrid courses as compared to traditional courses. Can educators accurately measure and compare student learning in two vastly different learning environments, traditional and hybrid? Does the hybrid course model enhance student learning and, if so, how?

There are similarities and differences between the findings in this study and literature on hybrid courses, as indicated in the previous section of this chapter. The major differences between this study and the literature available on hybrid courses revolve around the Seven Principles for Good Practice in Undergraduate Education. This study adds to the growing body of research regarding online education. It is recommended that educators who are interested in hybrid courses be informed as to the results of this study and its importance to undergraduate education. No technology will ever replace the need for human interaction in education, but hybrid courses have created opportunities that were not previously available. One can see the potential for hybrid courses and the impact on education and society.

APPENDIX A

CONSENT TO PARTICIPATE

My name is Dawn Olson. I am currently a doctoral candidate in the Department of Teaching and Learning at the University of North Dakota, collecting information for my dissertation.

The purpose of this study is to investigate whether hybrid classes, compared to the traditional face-to-face classes, improve the learning environment at Valley City State University. Through this study, I hope to gain insight into students' perception of hybrid courses and the learning environment.

Participation from students who have completed a hybrid course at Valley City State University is important to the completion of this survey project. Your participation is voluntary and you may withdraw at any time. Your name is not required on the survey; you will remain anonymous. Your completing of the survey demonstrates your consent to participate in this study.

Please note that your responses will be used for research purposes only and will be strictly confidential. All the data and information gathered from the survey will be kept in a secure location. There is minimal risk of loss of confidentiality.

Thank you for your help with this study. If at any time you are uncomfortable and wish to end your participation in this study, you may do so. If you have any questions or are interested in the results of this study, please contact me at 845-7722 or 572-5471. You may also contact my advisor, Dr. Myrna Olson, at 777-3188.

APPENDIX B
HYBRID COURSE SURVEY

The purpose of this survey is to investigate whether hybrid classes improve the learning experience. A hybrid class is defined as follows: *Seat-time is replaced by web-based components (Blackboard). The amount of seat-time replaced determines the percentage of the class that is web-based.* For example, a class may meet twice a week in the classroom and once per week online.

Directions: In general, how do you feel hybrid classes, when compared to traditional face-to-face classes, affected the following? Please check one box per question.

Item	Increased 5	Somewhat Increased 4	No Difference 3	Somewhat Decreased 2	Decreased 1
The <u>amount</u> of your interaction with other students?					
The <u>quality</u> of your interaction with other students?					
The <u>amount</u> of your interaction with the instructor?					
The <u>quality</u> of your interaction with the instructor?					
The <u>amount</u> of feedback you received from other students?					
The <u>amount</u> of feedback you received from the instructor?					
The <u>promptness</u> of the feedback you received from the instructor?					
The <u>promptness</u> of the feedback you received from other students?					
The <u>amount</u> of time you actively participated in the course?					
The <u>amount</u> of responsibility for your own learning?					
The <u>amount</u> of time you had for work and other responsibilities?					
The <u>amount</u> of control you had over your learning?					
The <u>ability</u> to complete tasks at times that were convenient for you.					
The <u>chance</u> to get to know students who are different from you in their cultural and socio-economic background?					
The <u>quality</u> of your work?					
The <u>amount</u> of educational resources available to you?					
The <u>ability</u> to better understand the ideas taught in this course?					

Please answer the following:

1. Please indicate your employment status as of today:
Full time _____ Part time _____ Not employed _____
(35+ hours per week) (less than 35 hours per week)
2. Please indicate your age: _____
3. Please indicate your academic standing as of the beginning of this semester:
Freshman _____ Sophomore _____ Junior _____ Senior _____
4. Please indicate where you live as of today: Off campus _____ On campus _____
5. Please indicate your gender: Male _____ Female _____
6. Please indicate your academic status:
Full-time student _____ Part-time student _____
(enrolled in 12+ credits) (enrolled in fewer than 12 credits)
7. How many hybrid classes have you taken, including those you are currently taking? _____
8. On average, do you prefer hybrid classes to traditional face-to-face classes?
Yes _____ No _____
Please explain why you feel this way.
9. As a result of your experience with hybrid classes, do you feel you have changed your approach to learning? Yes _____ No _____ (If yes, please explain)
10. What do you like most about hybrid classes?

11. What do you like least about hybrid classes?

12. Do you have any additional comments and suggestions?

REFERENCES

- Aycock, A., Garnham, C., & Kaleta, R. (2002, March 20). Lessons learned for the hybrid course project. *Teaching with Technology Today*, 8(6). Retrieved from <http://www.uwsa.edu/ttt/articles/garnham2.htm>
- Belenky, M., Clinchy, B., Goldberger, N., & Tarule, J. (1986). *Women's ways of knowing*. New York: Basic Books.
- Berge, Z. (2000). *Concerns of online teachers in higher education*. Retrieved December 15, 2002, from <http://www.emoderators.com/zberge/iste98.html>
- Bialo, E., & Siven, J. (1990). *Report on the effectiveness of microcomputers in schools*. Washington, DC: Software Publishers Association. (ERIC Document Reproduction Service No. ED327177)
- Bleed, R. (2001, January/February). A hybrid campus for the new millennium. *EDUCAUSE Review*, 17-24.
- Boettcher, J., & Conrad, R. (1999). *Faculty guide for moving teaching and learning to the web*. Tallahassee: League for Innovation in the Community College, Florida State University.

- Bonk, C. J., & Cunningham, D. J. (1998). Searching for learner-centered, constructivist, and sociocultural components of collaborative educational learning tools. In C. J. Bonk & S. K. King (Eds.), *Electronic collaborators: Learner-centered technologies for literacy, apprenticeship, and discourse* (pp. 25-50). Mahwah, NJ: Erlbaum.
- Brown, D. G. (2002). *Hybrid courses are best*. Retrieved October 28, 2002, from <http://www.wfu.edu/~brown/Syllabus%20Articles/SylHybrid%20Courses.htm>
- Brown, J., & Duguid, P. (1996, July/August). Universities in the digital age. *Change*, 11-19.
- Campus Computing Project. (1997, October). *The continuing challenge of instructional integration and user support*. Retrieved December 2, 2002, from www.campuscomputing.net
- Chickering, A., & Ehrmann, S. (1996, October). Implementing the seven principles: Technology as lever. *AAHE Bulletin*, 3-6.
- Chickering, A. W., & Gamson, Z. F. (Eds.). (1991, Fall). *Applying the seven principles for good practice in undergraduate education*. San Francisco: Jossey-Bass.
- Cross, K., & Angelo, T. (1988). *Classroom assessment techniques: A handbook for faculty*. Ann Arbor, MI: National Center for Research to Improve Post-secondary Teaching and Learning.
- Davis, J. R. (1993). *Better teaching, more learning: Strategies for success in post-secondary settings*. Phoenix: The Onyx Press.
- Ehrmann, S. C. (1997, June). The flashlight project: Spotting an elephant in the dark. *Vision*. Retrieved from <http://ts.mivu.org/default.asp?show=article&id=531>

- Garnham, C., & Kaleta, R. (2002, March 20). Introduction to hybrid courses. *Teaching with Technology Today*, 8(6). Retrieved from <http://www.uwsa.edu/ttt/articles/garnham.htm>
- Gray, L. (1999). *A hybrid approach to web-delivered courses: Preparing principals and superintendents*. Winona, MN: Department of Educational Leadership, Winona State University. Retrieved November 6, 2002, from <http://naweb.unb.ca/proceedings/1999/graylee.html>
- Green, K. (1996, March/April). The coming ubiquity of information technology. *Change*, 28(2), 24-28.
- Green, K. C. (2000, April). On content and contentiousness. *Converge*. Retrieved November 2, 2002, from <http://www.cibvergenag.com/Publications/CNVGApr00/DigTweed/DigitalTweed.shtm>
- Grossman, H., & Grossman, S. (1994). *Gender issues in education*. Needham Heights, MA: Allyn and Bacon.
- Holleque, K. (1999). *Transforming higher education: Excellence within a culture of innovation*. Valley City, ND: Valley City State University, Division of Education and Psychology.
- Jacobsen, D., Eggen, P., & Kauchak, D. (1993). *Methods for teaching: A skills approach* (4th ed.). New York: Merrill.
- Johnstone, D. B. (1992). *Learning productivity: A new imperative for American higher education*. Retrieved December 15, 2002, from <http://192.52.179.128/program/nlii/articles/johnstone.html>

- Lago, M. E. (2000, November). The hybrid experience: How sweet it is! *Converge*. Retrieved from <http://www.convergemag.com/Publications/CNVGNov00/hybrid/index.shtm>
- Leblanc, R. (1988, October 8). *Good teaching: The top ten requirements*. Retrieved from <http://www.hcc.hawaii.edu/intranet/committees/FacDevCom/guidebk/teachtip/topten.htm>
- Leh, A. (2002, March). Action research on hybrid courses and their online communities. *Educational Media International*, 39(1), 31-38.
- Lehrer, R. (1993). Authors of knowledge: Patterns of hypermedia design. In S. P. Lajoie & S. J. Perry (Eds.), *Computers as cognitive tools* (pp. 197-227). Hillsdale, NJ: Erlbaum.
- Mehlinger, H. D. (1996). School reform in the information age. *Phi Delta Kappan*, 77(6), 400-407.
- Moskal, P., & Dziuban, C. (2001). Present and future directions for assessing cyber-education: The changing research paradigm. In L. Vandervert & L. Shavinina (Eds.), *CyberEducation: The future of long distance learning* (pp. 157-184). Larchmont, NY: Mary Ann Liebert.
- Oppenheimer, T. (1997). The computer delusion. *The Atlantic Monthly*, 280(1), 45-62.
- Proost, K., Elen, J., & Lowyck, J. (1997, Summer). Effects of gender on perceptions of and preferences for telematic learning environments. *Journal of Research on Computing in Education*, 29, 370-384.
- Russell, T. L. (1999). *No significant difference phenomenon*. Raleigh: North Carolina State University.

- Sands, P. (2002, March 20). Inside outside, upside downside: Strategies for connecting online and face-to-face instruction in hybrid courses. *Teaching with Technology Today*, 8(6). Retrieved from <http://www.uwsa.edu/ttt/articles/sands2.htm>
- Sax, L. (1999). *HERI 1998-1999 faculty survey, UCLA*. Retrieved November 9, 2002, from http://www.gseis.ucla.edu/heri/Faculty_Overview.html
- Snider, J. H. (1996). Education wars: The battle over information-age technology. *The Futurist*, 30(3), 24.
- Sullivan, E. (1997, Winter). Campus technology trends. *Educational Record*, 35-36.
- Trinkle, D. A. (1999, August 6). Distance education: A means to an end, no more, no less. *The Chronicle of Higher Education*, p. A60.
- Turner, L., & Perry, S. (2002). Campus human resource leadership: A mandate for change. In B. L. Hawkins, J. A. Rudy, & W. H. Wallace, Jr. (Eds.), *Technology everywhere: A campus agenda for educating and managing workers in the digital age* (EDUCAUSE Leadership Strategies, Vol. 6, pp. 53-73). San Francisco: Jossey-Bass.
- Twigg, C. (1999, Spring). Getting results from investments in technology. *Priorities*, 12, 1-3.
- Twigg, C. A. (1992). Improving productivity in higher education: The need for a paradigm shift. *Cause/Effect*, 15(2), 39-45.
- University of Wisconsin Milwaukee Learning Technology Center. (n.d.). *Hybrid courses*. Retrieved November 6, 2002, from <http://www.uwm.edu/Dept/LTC/hybrid-courses-advantages.html>

- Valley City North Dakota resource guide.* (n.d.). Retrieved June 9, 2003, from <http://www.pe.net/~rksnow/ndcountyvalleycity.htm>
- Valley City State University year-long schedule.* (2003). Valley City, ND: Valley City State University.
- Wager E. D., & McCombs, B. L. (1995). Learner-centered psychological principles in practice: Designs for distance education. *Educational Technology*, 35(2), 32-35.
- Young, J. R. (2002, March 22). "Hybrid" teaching seeks to end the divide between traditional and online instruction. *The Chronicle of Higher Education*. Retrieved November 6, 2002, from <http://chronicle.com/free/v48/i28/28a03301.htm>
- Zeller, A. (2001, April 24). Hybrid offers new tool for MCC faculty. *Mesa Legend*, 38(13). Retrieved from http://www.mc.maricopa.edu/other/legend/archives/vol38issue13/news3_042401.htm
- Zhu, E., & Kaplan, M. (2002). Technology and teaching. In W. J. McKeachie (Ed.), *McKeachie's teaching tips* (11th ed., pp. 204-221). Boston: Houghton Mifflin Company.