

**LEARNING STRATEGIES, MOTIVATION, AND SELF-REPORTED ACADEMIC
OUTCOMES OF STUDENTS ENROLLED IN WEB-BASED COURSEWORK**

by

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Dedication

This project is dedicated to my father,

Robert P. Garling,

For his belief in the power of education.

Acknowledgments

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Chapter I

Introduction

Background of the Study

The arrival of the Internet and the web browser has led to a worldwide explosion of web-based virtual classes as a form of delivery systems among institutions of higher education (Moore & Kearsley, 2004). Web-based delivery systems provide students with the option of selecting courses from major universities or local colleges without the constraints of time and place. This flexibility provides students with opportunities for expanded learning and academic achievement (Smith-Winking & Diaz, 2004). Adult students are enrolled in higher education because of the technology demand of the workplace and society and the responsibility of family. These adult students still look for lifelong learning that allows for a formal education without the constraints of attending a face-to-face traditional class (Smith-Winking & Diaz, 2004).

In 2001, the National Center for Education Statistics (NCES) published the results of a survey of distance education in postsecondary institutions. In 2000-2001, it was found that 56% of all degree granting institutions offered distance education courses. An additional 12% of the institutions reported that they would be offering a form of distance education courses in the next three years. During the 2000-2001 academic years, it is estimated that 3,077,000 students enrolled in 127,400 different distant education courses offered in 2-year and 4-year institutions. The majority of institutions used the Internet as the delivery method for their distance education courses (NCES, 2001).

Students who enroll in web-based classes do so for a variety of reasons such as elimination of time demands, learner centered instruction, and asynchronous course delivery (Holcomb et al., 2004). Davies (2002) listed reasons that students select online learning:

1. Students can learn at their own peak learning time of day.

2. Students can learn at their own speed.
3. Students can learn faster.
4. Students can interact more with teachers and other participants.
5. There are more topics and subjects online. Participants come from the foremost authorities and experts.
6. Online learning is less expensive and more accessible.
7. Internet links provide more resources.
8. Students can form virtual community. (Holcomb et al., 2004, p. 3).

Assessment of the effectiveness of the web-based instruction has had mixed results. The following studies have provided evidence that web-based instruction appears to be as effective as face-to-face instruction.

- Chute, Thompson, and Hancock (1999) compared the final exam grades of an undergraduate statistics course delivered as a face-to-face course and those of a web-based course and found the web-based course final grades were slightly higher.
- Hislop (2000) compared course final grades and completion rates of graduate students in web-based system analysis course with a course in a face-to-face format and found no significant difference.
- Neuhauser (2002) compared a course taught as both a web-based course and a face-to-face course and found that the retention rates for both were 84%. The test score and final grades were comparable.
- Olson and Wisner (2002) reviewed 47 evaluation reports of web-based courses in higher education between 1996 and 2002. Many of the studies were comparisons of students taking the same courses but in the two different formats, face-to-face and web-based. Olson and Wisner found that web-based instruction was at the least as effective as face-to-face instruction.

Despite these points, growing concerns about retention in web-based courses has many administrators wondering what they can do to keep their students enrolled, especially as more institutions of higher education use web-based courses to attract new students. Very little web-based retention data has been collected in major studies as yet, due to the short history of this course delivery method. Oblender (2002) reported the average dropout rate for distance learning college classes in the United States is 50%.

A survey was administered by *The Chronicle of Higher Education* and although the results of the survey are limited, several findings are worth reporting. This publication indicated that one state university reported that their web-based courses retention rate was 58% as compared with the face-to-face course retention rate of 71%. Another university mentioned in the same publication cited a 5% withdrawal rate from face-to-face courses, but a 9% withdrawal rate from the web-based courses. In addition a college professor reported that 50% of his web-based students completed the course as compared to the 70% completion rate of his face-to-face students (One student in a web-based course even reported that 75% of the students dropped the course). Although the numbers are a small sample of retention data, they indicate that the retention rate for web-based students is a point of concern (Carr, 2000).

Given this concern, the question arises as to whether adult students can learn at any time and/or whether there are pre-requisite strategies students must possess for successful completion of web-based courses (Blocher, et al., 2002). The research data provided in this study explored the possibility that student retention in web-based courses is linked to, (1) reasons for enrolling in web-based courses, (2) learning strategies associated with self-regulation, (3) self-efficacy, and (4) motivation.

According to Lynch & Dembo (2004), self-regulatory attributes are important for retention in web-based classes. These attributes include motivation, Internet self-efficacy, time

management, study environment management, and learning assistance management. Motivation is the combined influence of self-efficacy and goal orientation and focuses on students' reasons for wanting to learn (Pintrich & Schunk as cited in Lynch & Dembo, 2004).

Purpose of the Study

The purpose of this study is to examine the relationship between student self-regulation, self-efficacy, motivation toward web-based coursework, self-reported course outcomes, and reasons for enrolling in web-based courses on student retention in web-based courses.

Research Questions

The following research questions were addressed in this study:

1. Can students' self-reported outcomes in web-based courses at mid-term be predicted from subscales measuring motivation and learning strategies scales on the Motivation Strategies for Learning Questionnaire (MSLQ) ?
2. Is there an association between reasons that students take web-based courses and students' self-reported outcomes in web-based courses at mid-term?
3. Is there an association between reasons that students take web-based courses and the number of credit hours completed, number of credit hours earned in traditional classes, and number of credit hours earned in on-line courses?

Significance of the Study

Web-based course delivery is developing into a significant form of course design for higher education. Many administrators in higher education are encouraging faculty to develop this form of course delivery with little mature research in web-based course design or pedagogical theory. Many faculties are complying by converting digitally course material that works in the traditional class room and calling it a web-based course (Hara & Kling, 1999).

The work of Diaz, Phipps, & Mertisotis (as cited in Lynch & Dembo, 2004) suggested that the research in web-based course delivery has been driven by situational variables, which are “lacking in a pedagogically relevant theoretical underpinning” (p. 6). This form of research provides faculty with little teaching or learning theory for developing courseware or enhancing student success in the web-base course. The present research addresses this lack of theory by studying the student dispositional variables, (a) self-regulation, (b) self-efficacy, and (c) motivations as proponents of student retention in a web-based course.

Conceptual Definition of Terms

Retention in web-based courses	The continuation through the awarding of a grade in a web-based course.
Self-reported course outcomes	Final grades in web-based courses as reported by the students. No attempt was made to verify the accuracy of their reports.
Student’s self-efficacy:	Self-efficacy is the belief in one’s ability to coordinate and execute the course of actions that are required to manage the course completion (Bandura 1994).
Student’s self-regulation:	Student’s capability to use self-regulated learning strategies such as self-monitoring, self-evaluation, goal setting and planning self-consequences, and environmental restructuring (Stankaran & Bui, 2001).
Motivation:	Level of motivation is reflected in choice of course of action, and the intensity and persistence of effort (Bandura, 1994).
Learning strategies:	Activities by which learning is achieved. (Stankaran & Bui, 2001).

Operational Definition of Terms

Motivation	Motivation was measured from the Motivational Strategies for Learning Questionnaire (MSLQ). Motivation was operationalized using the MSLQ subscales measuring self-efficacy for learning and performance and intrinsic goal orientation.
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Self-regulatory variables: Time and study environment management and help seeking are operationalized using subscales from the MSLQ.

Limitations of the Study

The following limitations may reduce the generalization of the findings to larger populations:

1. The study is limited to students enrolled at a single community college. Therefore, the findings may not be generalizable to other community colleges or other types of postsecondary learning institutions.
2. The study is limited to students enrolled in web-based courses. The findings may not be generalizable to students enrolled in traditional face-to-face courses.

Assumption

As personal characteristics (e.g., gender, marital status, ethnicity, age) have been the focus of previous research related to retention in web-based courses, these variables were reported for descriptive purposes. Differences in these characteristics may be a source of variance in the dependent variables, but not included in statistical analyses to address the research questions developed for this study.

Chapter 2

Literature Review

The review of the most current literature provides a comprehensive overview of major aspects of web-based education. The review includes the web-based issues of student retention and attrition, as well as theories on social learning, adult learning and distance education. Among the topics included in the review of literature are self-regulation, self-efficacy and motivation. Reference to the international aspects of web-based education is included.

Introduction to Distance Education

The United States Distance Learning Association defines distance education as “the acquisition of knowledge and skills through mediated information and instruction, encompassing all technologies and other forms of learning at a distance” (Weaver, 2002, p.13). According to the United States Department of Education, distance education is an instructional delivery system which does not allow students and instructors to be at the same location when instruction is being presented (Gilbert, 2001).

Distance education in postsecondary institutions includes delivery of instruction using “high tech” formats that embrace the Internet as well as other technical delivery systems which comprise such media as desk top conferences, audios, videos, correspondence courses, and extension courses (Gilbert 2001). Because of the many forms of distance learning there have resulted lists of names associated with specific formats. They are variously called nontraditional education, life long learning, home study, independent study, continuing education, and web-based education. For the purposes of this study, the term, “web-based education”, is used to describe distance learning.

Bandura's Social Cognitive Theory

Social cognitive theory focuses on the process of individuals learning by modeling through their behaviors and the environment (Bandura, 1986). Bandura (1986) stated:

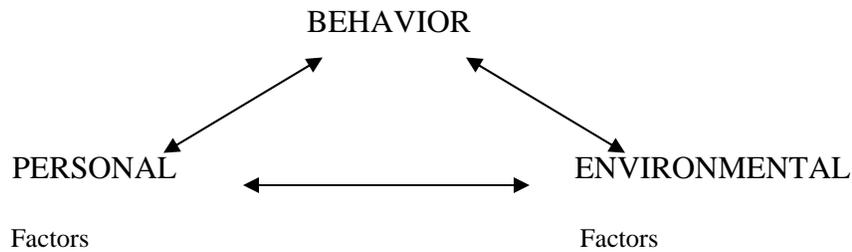
Choices are not completely and involuntarily determined by environment events. Rather, making choices is aided by reflective cognitive activity through which self-influence is largely exercised. People exert some influence over what they appraise their capabilities to execute successfully the possibilities they are entertaining. Indeed, it is because thought can affect action that people can make causal contribution to their own behavior (p. 39).

Concepts of Social Cognitive Theory:

- Environment: Factors physically external to the person's providing opportunities and social support
- Situation: Perception of the environment
- Behavioral capability: Knowledge and skill to perform a given behavior
- Expectations: Anticipatory outcomes of a behavior
- Expectancies: The value that the person places on a given outcome
- Self-control: Personal regulation of goal-directed behavior or performance; providing opportunities for self-monitoring, goal setting, problem solving, and self-reward
- Observational learning: Behavioral acquisition that occurs by watching the action and outcomes of others' behavior (credible role models of the targeted behavior)
- Reinforcements: Responses to a person's behavior that increase or decrease the likelihood of reoccurrence, promoting self-initiated rewards and incentives)
- Self-efficacy: The person's confidence in performing a particular behavior (Approaching behavioral change in small steps to ensure success)

- Reciprocal determinism: The dynamic interaction of the person, the behavior, and the environment in which the behavior is performed (Glanz et al, 2002, p. 169).

Figure 1: Overview of Social Cognitive Theory



(Cognitive, affective, and biological events)

Pajares (2002)

Adult Learning Theory

Knowles' (1978) theory of andragogy was developed for adult learners. He defines andragogy as: “the art and science of helping adults learn” (Conner, p.2, 2004).

The andragogic learning model focuses on the following adult learning issues:

- Learners need to understand why learning a subject or idea is worthwhile.
- Learners need to be shown how to navigate through the material to learn.
- The material should be equated to the learner’s needs or experiences.
- Learners need to be encouraged to learn. They must make the decision to learn on their own, when they are ready.
- Learners need assistance in developing better learning habits and overcoming previous negative learning experiences. (Conner, 2004)

The characteristics and implications of adult learning theory for both adult learners and teachers or presenters of information are listed in Table 1.

Table 1
 Characteristics and Implications of Adult Learning Theory
 Developed by Malcolm S. Knowles

Implications for Adult Learning	Implications For Presenters
A climate of openness and respect is helpful in identifying what learners want and need to learn.	Presenters recognize participants as self-directing...and treat them accordingly.
Adults enjoy planning and carrying out their own learning exercises.	The presenter is a learning reference for the participants rather than a traditional instructor; presenters are, therefore, encouraged to “tell it like it is” and stress, “how I do it” rather than tell participants what they should do.
Adults need to be involved in evaluation of their own progress toward self-chosen goals.	The presenter avoids “talking down” to participants who are experienced decision-makers and self-starters. The presenter instead tries to meet the participants’ needs.
Less use is made of transmittal techniques; more experiential techniques.	As the adult is his experience, failure to utilize the experience of the adult learner is equivalent to rejecting him as a person.
Discovery of how to learn from experiences is key to self-actualization.	
Mistakes are opportunities for learning.	
To reject adult experience is to reject the adult.	
Adults need opportunities to identify the competency requirements of their occupational and social roles.	Learning occurs through helping participants with the identification of gaps in the learner’s knowledge.
Adult readiness-to-learn and teachable moments peak at those points where a learning opportunity is coordinated with recognition of the need-to-know.	No questions are “stupid”; all questions are “opportunities” for learning.
Adults can best identify their own readiness-to-learn and teachable moments.	
Adult education needs to be problem-centered rather than theoretically oriented.	The primary emphasis in the course is student learning rather than on teachers teaching.
Formal curriculum development is less valuable than finding out what the learners need to learn. Adults need the opportunity to apply and try out learning quickly	Involvement in such things as problems to be solved, case histories, and critical incidents generally offer greater learning opportunity for adults than “talking to” them.

Knowles, 1978, p.184-185

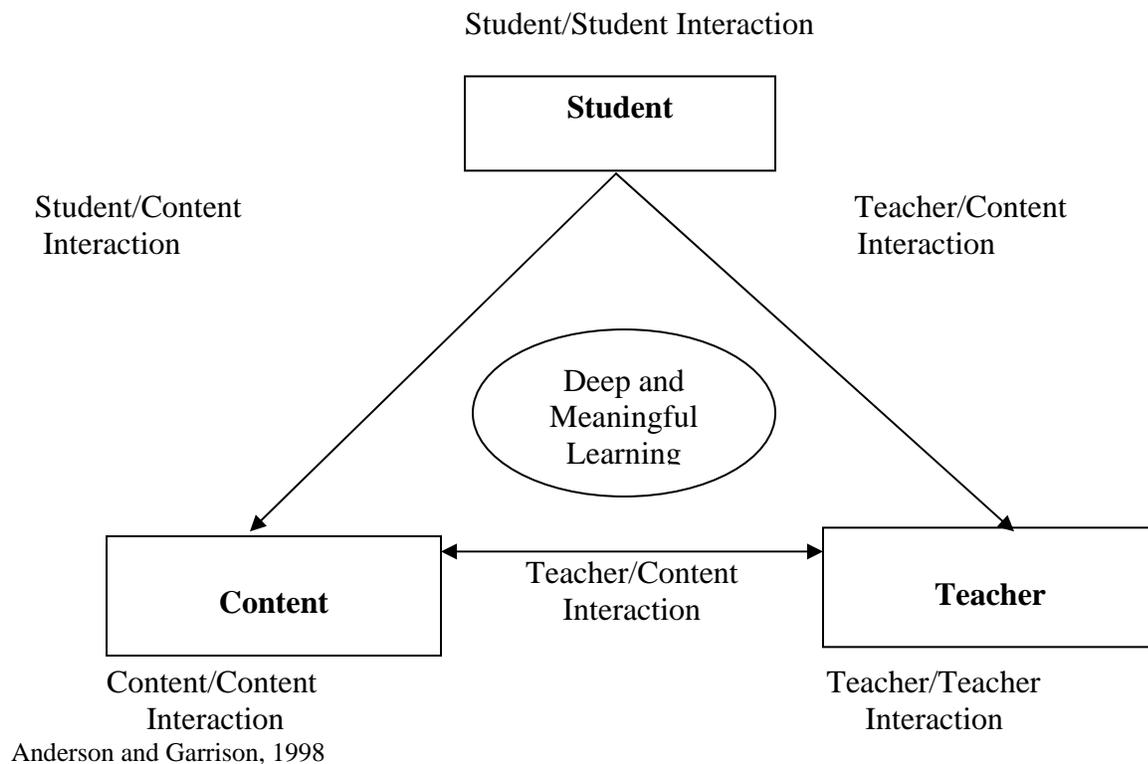
Theory of Distance Education

The Theory of Transactional Distance is a “pedagogical phenomena” (Moore & Kearsley, 2004) and not just a separation of teacher and learner, that describes the influence of distance education. Moore and Kearsley asserted that:

What is important for both the practitioners and researchers is the effect that this geographical distance has on teaching and learning, communication and interaction with the curriculum and course design. Transactional Distance is the gap of understanding and communication that must be bridged through distinctive procedures in instructional design. (p. 223)

Transaction is defined as situational interactions among the environment, individuals and patterns of behaviors (Boyd & Apps as cited in Moore & Kearsley, 2004).

Figure 2: Modes of Interaction in Distance Education



Transaction distance signals the level of how much and what kind of instruction is needed to provide dialogue and structure necessary to ameliorate the distance between the instructor and

students (Moore & Kearsley, 2004). Although dialogue is communication between two or more persons it is defined by Moore (as cited in Moore & Kearsley, 2004) in the following manner:

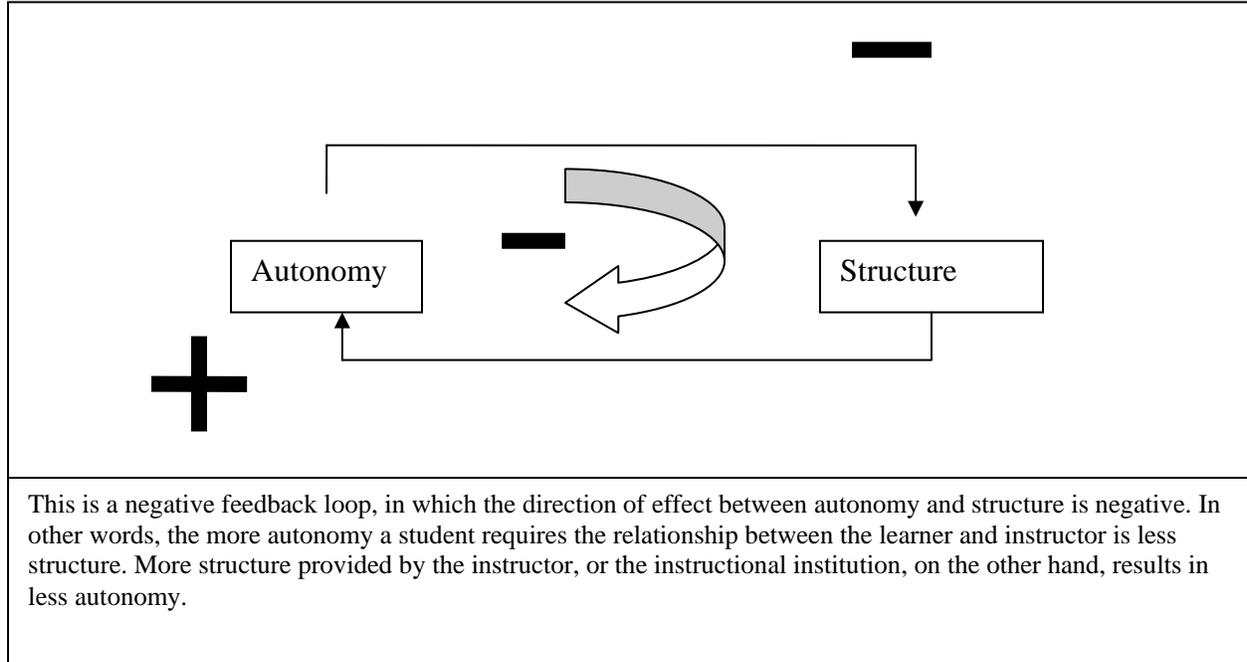
The term dialogue is used to describe an interaction or series of interactions having positive qualities that other interactions might not have. A dialogue is purposeful, constructive and valued by each party. Each party in a dialogue is a respectful and active listener; each is a contributor, and builder on contributions of the other party or parties. The direction of a dialogue in an educational relationship is towards the important understanding of the student. (p. 224)

Structure in the transactional distance model is an element of the course design. Structure in this instance is the manner in which the course materials are presented to students. Since the process in which students receive course communication is determined by the educational philosophy of the instructor and the academic level of the course, it is the instructor who decides the appropriateness of the media in the context of course components (Moore & Kearsley, 2004).

Saba and Shearer System Dynamics Model. Saba's (1994) The system dynamics model developed by Saba and Shearer (1994) is an integrating one which provides a flexible means to decrease structure by increasing dialogue. Saba's and Shearer's model also provides increased structure to student-instructor dialogue that can be kept at a desirable level.

This structure of dialog can be displayed as a negative feedback loop in a system dynamics causal loop diagram. The negative flow diagram represents an inverse relationship between levels of dialogue and structure. As dialogue increases, structure decreases, and as structure decreases dialogue increases to maintain the stability of the system. In a negative feedback loop system, the stability of the system depends on interventions from outside the loop. The level depends on the action of teacher and learner. In a plausible scenario, the need to decrease structure is communicated to the teacher. Consultation between students and instructors automatically increases dialogue; then adjustments in goals, instructional materials, and evaluation procedures occur, with the learner achieving the desired level of autonomy (Moore & Kearsley, 2004). This system is the dynamic causal loop diagram in figure 3.

Figure 3: Causal Loop Diagram of Transactional Distance



Saba & Shearer, 1994, p. 2

Retention, Persistence and Attrition in Postsecondary Education as exposed by Berg and Huang include.

- Retention is continued student participation in a learning event to its completion, which in higher education could be a course, program, institution, or system.
- Attrition is a decline in the number of students from the beginning to the end of the course, program, institution, or system under review.
- Persistence is the result of students' decision to continue their participation in the learning event under analysis (Berge & Huang, 2004).

For purposes of this research, retention and persistence will be used interchangeably.

Student Retention and Attrition Models

Table 2

Tinto's Student Integration Model

Categories	Examples
Pre-College Variables	Sex, race, social-economic status, SAT scores, class rank
Goals & Commitment	Commitment to wanting to complete the degree, Commitment to the educational and occupational goals one holds for oneself
Institutional Commitment	Commitment to the institution in which he/she is enrolled and the degree to which one is willing to work towards attaining one's goals within a given institution
Social Integration	Ability to make friends, involvement in extra-curricular activities
Academic Integration	Involvement with faculty, passing a course

Ford-Edwards, 2002

Table 3

Bean's Student Attrition Theory

Domains	Characteristics of Domains	Domain Measurements
Academic	Pre-enrollment: Grades, academic integration	College Grades
Social/Psychological	Faculty contact, Alienation, social life, friends	Institutional fit
Environmental	Finance, opportunity to transfer, academic experience	Institutional commitment

Ford-Edwards 2002

Bean's model suggested that the learner's "commitment" is a significant predictor of the student's persistence. Tinto's model emphasized the significance of social and academic integration fostering student persistence. These two models differed in the effect of external factors. Bean suggests that the external factors are significant in relation to student persistence, while Tinto's model focuses more on social integration as a significant factor in students' retention (Ford-Edwards, 2002).

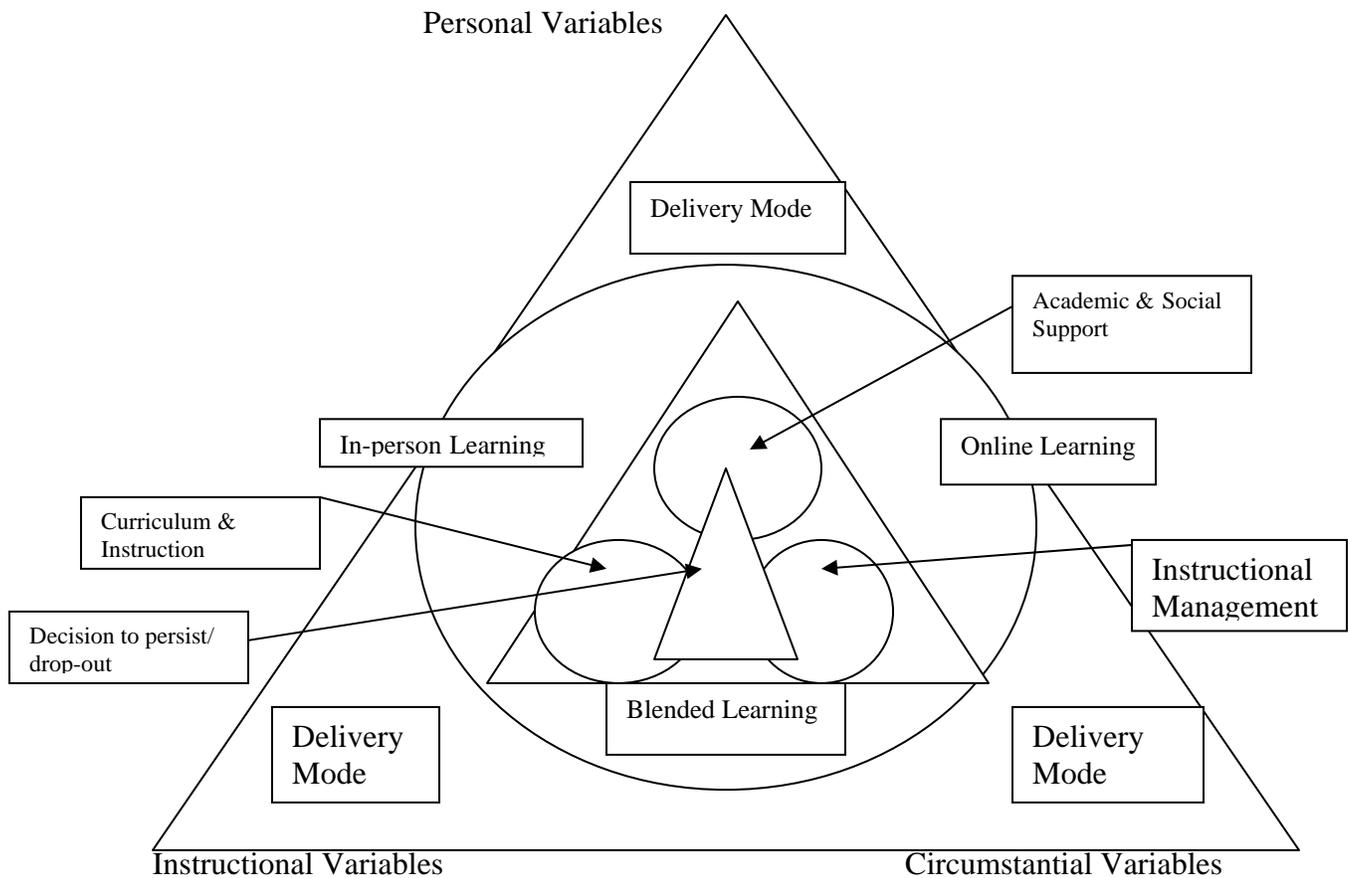
Sustainable Retention Model Using e-Learning

The Berge and Huang (2004) model for sustainable student retention was developed from a need for a retention effort that addressed all areas of a postsecondary institution. Their model

addressed three areas associated with student retention: personal variables, institutional variables, and circumstantial variables. The model's framework functions included the effort to:

- Encourage commitment (personal goal commitment, institutional initial commitment, and ongoing commitment)
- Enhance integration (management and support services that enhance academic and social experience)
- Improve delivery systems (delivery of institution and support in online, blended and/or in-person settings, [e.g., institutional support services, student support services, staff development on proactive academic advising; institutional network])
- Increase person-environmental fit (easing stages of transition, facilitate person-institutional, person-circumstances, and institutional-circumstantial fit)
- Improve academic outcomes (e.g., academic performance and intellectual development), as well as psychological outcomes (e.g., perceived utility and satisfaction) (Berg & Huang, 2004, p. 13).

Figure 4: Sustainable Retention Model Using e-Learning



Berg & Haung (2004, p20)

Students who Drop Out of Courses

Cowan's (as cited in Thompson, 1997) University Study found that drop-out rates in distance education were higher than for on-campus courses. Students gave several reasons for withdrawals, including work, family and study commitments. These students had completed less course work and had lower grades than students who persisted.

Phythian and Clement's study (as cited in Cookson, 1990) at the British Open University involved students enrolled in an advanced math course. The researchers found substantial increases in dropout rates. The survey group consisted of students who had withdrawn from the

advanced math courses between 1978 and 1979. Student's indicated that reasons for deciding to drop-out included: getting a job (27%), domestic circumstances (26%), and course difficulty (16%). Students were encouraged to describe individual reasons for their decisions to withdraw from the course, and their responses were grouped into the following categories: (a) isolation when seeking help, (b) cost of course, and (c) level of work in the course (Cookson, 1990).

Carr and Ledwith (as cited in Cookson, 1990) used university student records to identify student dropout by occupation. Dropouts were more likely to occur for students in manual trades (46%), skilled trades (27.0%), and housewives (13%). When persistence was examined by Carr and Ledwith (as cited in Cookson, 1990) females were more likely to persist in social science and math courses, while males tended to persist in science and technology courses (Cookson, 1990).

Kennedy and Powell's study (as cited in Cookson, 1990) focused on students who had dropped out of the British Open University. They analyzed characteristics of the 684 students who had withdrawn from the college. These researchers indicated that 291 students had dropped in part because of their course load, with 236 students at risk of withdrawing. Kennedy and Powell (as cited in Cookson, 1990) concluded that student dropouts were associated with "students' characteristics and their life circumstances" (p. 62).

Part-time students sometime have a difficult time maintaining an equilibrium of the pressures within their lives, such as those arising from jobs or individual domestic situations. If one more pressure increases unduly, the equilibrium is upset and the student may become "at risk" (Cookson, 1990, p. 62).

Studies of Student Retention

The Osborn (2001) study looked at the development of a survey which would be administered to web-based students early in the semester. This would allow time for students to

schedule tutoring and problem solving and retention in a web-based course. The Brown (2004) study found that gender, and reading and writing skill levels contributed to student retention in a web-based course. The Carr (2000) study found the student's retention low in web-based courses that were taught by inexperienced faculty. The Brown (2004) study looked at developing an instrument that would predict student retention. This would be administered prior to the start of the web-based course. The Morris, Wu, Finnegan (2005) study found the students' high school GPA and math scores were predictors of student retention in a web-based course. The Moan, Dershiwsky (2002) study found that students with time management skills were less at risk of not completing the web-based course.

Self-Regulation

Studies of self-regulated students demonstrate, according to Zimmerman, the following characteristics:

- They are familiar with and know how to use a series of cognitive strategies (repetition, elaboration and organization), which help them to attend to, transform, organize, elaborate and recover information.
- They know how to plan, control and direct their mental processes towards the achievement of personal goals (metacognition).
- They show a set of motivational beliefs and adaptive emotions, such as a high sense of academic self-efficacy, the adoption of learning goals, the development of positive emotions towards tasks (e.g. joy, satisfaction, enthusiasm), as well as the capacity to control and modify these, adjusting them to the requirements of the task and to the specific learning situation.

- They plan and control the time and effort to be used on tasks, and they know how to create and structure favorable learning environments, such as finding a suitable place to study and seeking help from teachers and classmates when they have difficulties.
- To the extent that the context allows it, they show greater efforts to participate in the control and regulation of academic tasks, classroom climate and structure (e.g., how one will be evaluated, task requirements, the design of class assignments, organization of work teams).

Self-regulated students are able to put into play a series of volitional strategies, aimed at avoiding external and internal distractions in order to maintain their concentration, effort and motivation while performing academic tasks. (Zimmerman, 1998, 2002; Montalvo & Torres, 2004).

Models of Self-Regulation

In Zimmerman's Model of Self-Regulation, "Self-regulation is not a mental ability, such as intelligence, or an academic skill, rather it is the self-directed process through which learners transform mental abilities into academic skills" (Zimmerman, 1998, p. 2). Self-regulated theorists equate student learning as an "open-ended process" (Zimmerman, 1998). The student must complete a constant rotation of the phases of "forethought, performance, volitional control, and self-reflection" to achieve academic learning (Zimmerman, 1998, p. 2). Table 4 is a visual representation of Zimmerman's model.

Table 4

Zimmerman's Cyclical Phases and Sub Processes of Self-regulation

	Cyclical self-regulatory phase	
<u>Forethought</u>	<u>Performance/volitional Control</u>	<u>Self-reflection</u>
Goal Setting	Attention focusing	Self-evaluation
Strategic planning	Self-instruction/imagery	Attributions
Self-efficacy beliefs	Self-monitoring	Self-reactions
Goal orientation		Adaptively
Intrinsic interest		

(Zimmerman, 1998, p. 4)

Additionally, Zimmerman (2002, p. 66) identified self-regulated learners' characteristics as being:

- Distinguished by their view of academic learning as something they do for themselves rather than as something that is done for them.
- Aware that self-regulation is not a single personal trait which students either possess or lack, but that it rather involves the selection of a process that is personally adapted for each learning task.
- Aware that self-motivation quality depends on several underlying beliefs, perceived efficacy and intrinsic interest. (Zimmerman, 2002, p. 66)

Self-Regulated Learning and Operant Views

Zimmerman (1989) explained that the self-regulation model, "has been conceptualized from different theoretical perspectives: operant, phenomenological, social cognitive, volitional, Vygotskian and constructivist" (Cordingley, Lai, Pemberton, Smith, & Volet, 1998, p. 15). Table 5 is a visual representation of the theoretical perspectives of self-regulation.

Table 5

Self-regulated Learning

Phases	Cognition	Motivation/Affect	Behavior	Context
1. Forethought planning and activation	Target goal setting Prior content knowledge activation Metacognitive knowledge activation	Goal orientation adoption Efficacy judgments Ease of Learning judgment (EOLs): Perceptions of task difficulty Task value activation, interest activation	(Time and effort planning) (Planning for self-observations of behavior)	(Perceptions of task) (Perception of content)
2. Monitoring	Metacognitive awareness and monitoring of cognition (FOKs, JOLs)	Awareness and monitoring of motivation and effect	Awareness and monitoring of effort, time use, need for help, Self-observation of behavior	Monitoring changing task and context conditions
3. Control	Selection and adaptation of cognitive strategies for learning, thinking	Selection and adoption of strategies for managing motivation and effect	Increasing/decreasing effort Persist, give up Help-seeking behavior	Change or renegotiate task, Change behavior
4. Reaction and reflection	Cognitive judgments attributions	Affective reactions Attributions	Behavior Choice	Evaluation of task, context

Pintrich, 2000, p.454

Pintrich's model presents a comprehensive example that lists the "different cognitive, motivational/affective, behavioral and contextual processes of self-regulation" (Montalvo & Torres, 2004, p. 7). His major contribution to the field of self-regulated learning has been the "conceptual framework, motivation as a key of self-regulation, goal orientation, the emphasis on testing predictors of theories and exploring relations among variables in actual classroom context" (Schunk, 2005, p. 88).

Self-Monitoring and Academic Self-Regulating

The question arises, why is self-monitoring significant for college student success? Zimmerman and Paulson answer that self-monitoring:

- Empowers the student to focus. Without a selective focus students usually will be unable to isolate the source of error, confusion or inefficiency.
- Gives students the ability to identify their effective and ineffective performances.
- Suggests that the current learning strategy is inadequate and that a more suitable one should be sought.
- Exists as an efficient resource for personal time management
- Presents the student with the opportunity for reflective thinking (Zimmerman & Paulsen, 1995).

Developing Academic Self-Regulation

To expose the personal, social and environmental conditions that lead students to become skillful rather than naïve self-regulators of their academic learning, Schunk and Zimmerman (Zimmerman, 1998) have suggested that self-regulation comes from several sources:

- Social source
- Parents, coaches, teachers
- Peers (siblings, friends and classmates)
- Self-directed experiences.

It is by the use of modeling, verbal small group interaction, physical guidance, corrective feedback, social structure, supervision and monitoring, peer teaching, cooperative learning and reciprocal teaching that students learn self regulation.

Self-Regulation and Goal Setting

Theories of self-regulation linked with goals are an area explored by Locke and Latham (1990), as well as Zimmerman (1998) Bandura and Schunk, (1981). These researchers found several interesting corollaries between self-regulation and goal setting. Goals reflect one's purpose and refer to quantity, quality, or rate of performance (Locke & Latham, 1990). Goal

setting involves establishing a standard or objective to serve as the aim of one's action. Goals are involved across the different phases of self-regulation: forethought; performance control; and self-reflection (Zimmerman, 1998) goals enhance self-regulation through their effects on motivation, learning, self-efficacy, and self-evaluation of progress (Bandura & Schunk, 1981). Goals motivate people to exert effort necessary to meet task demands and persist over time. Goals also direct individuals' attention to relevant task features, behaviors to be performed, and potential outcomes. Goals can effect how people process information. They help people to focus on the task, select and apply appropriate strategies, and monitor goal progress. This entire process contributes to personal autonomy. Self-evaluation of progress strengthens self-efficacy and sustains motivation. Goal attainment builds self-efficacy and leads people to select new, challenging goals (Zimmerman & Schunk, 2001, p.1). Self-regulated learners determine, "who control important aspects of their cognition, behavior, and environment in attaining their learning goals" (Pintrich as cited in Lynch & Dembo, 2004, p. 2). Note the relationship between self-regulation attributes and related psychological processes in Table 6.

Table 6

Selected Self-Regulatory Attributes and Related
Psychological Process Comprising Online Learner Autonomy

Self-Regulation Attributes	Psychological Processes
Motivation	Efficacy beliefs: confidence in ability and skills to successfully perform specific learning tasks Goal orientation: reasons why a learner engages in learning task
Experience with Internet technology	Internet self-efficacy: confidence in using and/or learning the technologies employed in online education.
Time management skills	The ability to manage and structure learning time effectively and productively
Study environment management skills	The ability to ensure that the study environment is conducive to learning and restructure is as necessary.
Learning assistance management skills (help seeking)	The ability to know when help is needed, identify sources of help, obtain help, and evaluate the help received.

(Lynch & Dembo, 2004, p. 6)

Self-Efficacy

Self-efficacy is a person's judgment of his/her capabilities in organizing and executing a course of action required to attain a specific performance. (Schunk, 1991, p. 207). "Since Bandura's (1977) seminal article on self-efficacy, much research has classified and extended the role of self-efficacy as a mechanism underlying behavioral change, maintenance, and generalization" (Schunk, 1991, p. 207). Self-efficacy beliefs, influence what one wishes to do. They motivate one regarding the degree of effort and persistence. Bandura indicated that these same beliefs influence the outcomes of the regulated activity (Schunk & Pajares, 2001).

An individual's concept of self-efficacy can cause that individual to perceive his/her level of ability to perform in direct correlation to the perceived thoughts of self-efficacy. Two people with the same skill level can perform differently depending on the level of individual self-efficacy which these persons believe they have (Bandura, 1993, p. 118).

Schunk discussed how self-efficacy might function during academic learning. He indicated that at the start of an activity, students differ in their beliefs about their capabilities to acquire knowledge, perform skills, master the material, and so forth. Initial self-efficacy varies as a function of aptitude (e.g. ability and attitudes) and prior experience.

- Both personal factors and situational factors affect students while they are working.
- From these factors students derive cues signaling how well they are learning. They use these cues to assess efficacy for further learning.
- Motivation is enhanced when students perceive they are making progress in learning.
- Subsequently, as students work on tasks and become more skilled, they maintain a sense of self-efficacy for performing well. (Schunk, 1991).

Self-Efficacy Development

“Model similarity” can stimulate children’s self-efficacy when they see others are succeeding as long as they believe that they, too, can perform the task. The result then is an increase in their self-efficacy and positive motivation. Model similarity is a strong force among children and adolescents because peers are so similar in many ways. Additionally students at these development levels are themselves unfamiliar with many tasks so that they can be eager to imitate that which they perceive as success (Schunk & Pajares, 2001).

The Kindermann, McCollam and Dornbusch (1996) study found that children affiliated with highly motivated groups changed positively across the school year; those in less-motivated groups changed negatively. The Steinberg, Brown, and Dornbusch (as cited in Schunk & Pajares, 2001) study followed students from the start of their freshman year in high school until they graduated and found “development patterns in the influence of peer pressure on many activities, including academic motivation and performance” (p. 6). Students who worked on assignments were affected by goal setting, information processing and situational influences (such as rewards

and teacher feedback). This information provided the students with the knowledge of how they were learning the material (Schunk & Pajares, 2001).

Self-efficacy during young adulthood develops during a time when and as a result of their appreciating the personal new demands of marital relationships, parenthood, civic belonging and occupational careers (Bandura, 1998). When adults begin vocational careers their perceived self-efficacy is a great factor in determining how well they develop these basic cognitive, self-management and interpersonal skills on which occupational careers are founded. (Bandura, 1998) These new coping skills of managing one's motivation, emotional states and thought processes increase as they are acquired in a developing career through self-regulatory efficacy. The more efficacious one's self-regulation becomes, the more mature and productive becomes one's occupational functioning (Bandura, 1998).

Self-Efficacy as it Relates to Other Motivational Constructs

In discussing self-efficacy as it relates to other motivational constructs, it is helpful to begin with an examination of a proposed model of perceived control. In this model means-end or strategies are defined as beliefs that the potential cause produces given outcomes. This model defines agency or capacity as beliefs that individuals either have or can acquire potential cause; control is then defined as conviction as to whether or not, the individual can produce the outcome without the addition of other any means.

Self-efficacy theory may be defined as the perceived capabilities one has to control such self-referent activities as cognitive processes, emotions, and self-regulation behaviors (Bandura, 1998). However, several varying opinions and theories also contribute to a fully realized theory of Self-Efficacy. Vroom (1964) discussed expectations and values, stressing that behavior are a joint function:

- Persons' expectations of obtaining a particular outcome as a function of performing a behavior.
- The extent to which they value those outcomes (Vroom, 1964).

Additionally, researchers (Heider, Kelly & Michela, 1985; in ascribing to Weiner's Attribution Theory, make a point of assuming that persons seek to explain the cause of significant events.

Outcome expectations, which simply expose a person's estimate that a given behavior will lead to certain outcomes differs from the efficacy expectation. The latter holds the conviction that one has the ability to execute whatever behavior is required to produce the desired outcome (Bandura, 1997).

Byrne's exposition of self-concept involves that self-perception which individuals have about their academic abilities, most specifically about their feelings and knowledge concerning these abilities and skills. This leads positively to the confidence that one can indeed expect in the specific behavior required to produce the individual outcomes (Pajares, 1996).

Studies of Student Academic Performance and Self-Efficacy show a variety of findings. Efficacy beliefs have an effect on skills or other self-beliefs regarding performance by influencing effort, persistence, and perseverance, as exhibited in the studies by Bandura & Schunk; Bouffard-Bouchard; Lent, Brown, and Larkin; Schunk & Hanson. (as cited in Pajares, 1996). Students possessing a high self-efficacy undertook more effective self-regulatory strategies, according to the Bouffard-Bouchard, Parent and Larivee (as cited in Pajares, 1996). This finding was true at each level of ability. Student's self-efficacy enhanced memory by enhancing persistence, as was shown in the Berry (as cited in Pajares, 1996) study. Lent et al. (as cited by Pajares, 1996) found in their 1984 study that college students' high self-efficacy has been demonstrated to affect academic persistence and maintain academic achievement. Tracing relationships among self-efficacy perceptions, self-efficacy for self-regulation, academic self-

regulation processes, and academic achievement was possible (Risemberg & Zimmerman 1992; Zimmerman, 1989, 1990, 1994; Zimmerman & Bandura, 1994; Zimmerman & Martinez-Pons, 1990). Additionally, students who believed they were capable of performing academic tasks used more cognitive and metacognitive strategies and persisted longer than students who did not (Pintrich & Garcia as cited in Pajares, 1996).

Self-efficacy correlates with achievement outcomes in research findings (Bandura; Pajares; Schunk). Self-efficacy correlates with indexes of self-regulation. Self-efficacy, self-regulation, and the use of cognitive strategies are positively intercorrelated and predict achievement (Pintrich & DeGroot, 1990; Shunk & Pajares, 2001).

According to Bandura perceived self-efficacy is a product of four processes: cognitive, motivational, affective, and selection processes (Bandura, 1993). Cognitive self-efficacy enables the concept that personal goal setting is influenced by self-appraisal of capabilities. The degree of perceived self-efficacy relates directly to the height of predictable and measurable goal challenges people set for themselves thus producing a predictable and measurable commitment to them.

Perceived self-efficacy plays a major role in control of motivation. It is partly on the basis of self-beliefs of efficacy that people choose what challenges to undertake, how much effort to expend in the endeavor, and how long to persevere in the face of difficulties. (Bandura, 1989, p. 730)

Motivation

Motivation can be defined as “purposeful behavior that is ultimately directed toward the fundamental goal of inclusive fitness moreover, motivation can be measured, “in terms of individual differences in covarying categories of behaviors and interests”. Categories covary “because they are guided and directed by putative cognitive structures called motives” (Bernard, et al, p 129. 2002).

Motivation can be divided into two categories:

- Extrinsic motivation, which occurs when as a person engages in learning simply for a reward or for avoidance of a punishment (Dev, 1997).
- Intrinsic motivation, which occurs for its own sake, such as performing an action for which the only rewards are the spontaneous affects and cognition that accompany it (Woldkoski, 1985).

Academic motivation can be an internal state or condition that activates behavior and gives it direction. It also can be a desire or want that energizes and directs goal-oriented behavior. Either type of motivation can influence the intensity and direction of behavior (Huitt, 2001).

The overall importance of academic motivation is so great that students who are motivated to learn will have greater success in learning than those who are not. “Additionally, students who learn well will be more motivated to do so in the future” (Hodges, 2004). In discussing theories of motivation, Bandura identified the attribution theory, expectancy-value theory, and goal theory.

Since cognitive activity is a major source of motivation students will acquire self-motivation “and guide their actions anticipatorily through the exercise of forethought.” By identifying likely outcomes of their personal actions, they are more able to set goals for themselves and plan courses of action that will result in their desired effects (Bandura, 1989, p 729).

The attribution theory of motivation is a student’s “emotional reaction” (Pintrich & DeGroot, 1990, p. 34) to a task. The student associates success or failure of self with attributions. These attributions are either internal or external and are under their control or not under their control (Huitt, 2001). Test anxiety is known to be a major component of the attribution theory in

the classroom and can be associated with a student's metacognition, cognitive strategies, and task management (Pintrich & DeGroot, 1990).

The expectancy value theory of motivation can be defined as a student's perceived personal competence, self-efficacy, attribution style and control (Pintrich & DeGroot, 1990). Students who believe they have the ability to perform the task are more likely to take responsibility for the outcome. "Research has suggested that students who believe they can complete a task, use more cognitive strategies and are more likely to persist at the task" (Pintrich & DeGroot, 1990, p. 34). Vroom (as cited in Huitt, 1994) developed an equation to explain the expectancy theory:

$$\text{Motivation} = \text{Perceived Probability of Success (Expectancy)} \times \text{Connection of Success and Reward (Instrumentality)} \times \text{Value of Obtaining Goal (Valance, Value)}.$$

The student must have a high value of each variable to attain a high level of motivation and required behavior.

The value theory of motivation consists of a student's setting goals for the completion of a task. This motivation involves the student's reason for doing the task. Students who believe that the task is important and worth completing will develop organized plans for the completion of the task (Pintrich & DeGroot, 1990).

A current process of acquiring understanding of what future events can be has the power to transform them into the motivating and regulating behaviors needed in the present. As Bandura tells it, the cognized goals are translated into incentives and actions through the aid of self-regulatory mechanisms (Bandura 1989).

International Web-based Education

Partners of the research project, Courses on the Internet: Survey, Analysis, Evaluation, Recommendations (CISAER), Dias, Keegan, Mason, Paulsen and Rekkedal (2000) produced a report that analyzed interviews with over 70 professionals in the field of web-based education. From that research project, literature review noted that the educational institutions of Europe dominated the number of web-based education courses with 60% of the institutions offering web-based courses. North America placed second with 21% of its institutions offering web-based courses. Based on their analyses, Dias et al. developed strategic recommendations for international web-based education. These recommendations would:

1. Allow international movement of degrees, credit hours and grades between institutions.
2. Allow tuition fees for all universities and colleges.
3. Develop more cost effective web-based education.
4. Use more effective web-based course delivery technology.
5. Provide better research and training for web-course developers, administrators, and faculty.
6. Provide students with better web-based course summative assessment.
7. Encourage and initiate more research into web-based pedagogy.
8. Develop better processes for teaching web-based courses that would allow a decrease in teaching loads (Dias et al., 2000)

Keegan's (2004) review of Paulsen's book, *Online Education and Learning Management Systems. Global E-Learning in a Scandinavian Perspective*, suggested that North American web-based education has been dominated with too much emphasis on student learning alone. International web-based education needs to expand web-based course designs, which

encompasses an equal emphasis on teaching skills and learning formats. These in turn can promote students' learning and retention. Paulsen (as cited by Keegan, 2004) emphasized the need for pedagogy development, sustainability of web-based education with consistent funding, and a major push for more research and evaluation of teaching, course design and learning outcomes in web-based education. The following table shows similarities and differences in providing modes of delivery in various geographical systems.

Table 7

Modes of Provisions of Online Learning for Various Geographic Locations

Mode of provision	System Characteristics	Systems in 2000	Mode of Communication	Learning Materials
Grouped based distance education	Full-time students	Chinese Dianda (1979-)	Synchronous	Print Satellite Tutorials
	Part-time students	United States (USDLA) Chinese Dianda (1990-) Scandinavian (1960-70) Satellite systems Videoconferencing systems	Synchronous	Print Satellite Videoconferencing
Individual based distance education	Prepared materials	European systems Chinese Correspondence system United States DETC United States NUCEA WWW courses Open Universities Canadian systems Australian systems Rest of the world	Asynchronous	Radio Television World Wide Web Print Video
	No prepared materials	University of London external degree University of South Africa (1918-46) Chinese examination system	None	Study Notes

Keegan, 2004, p. 3

Conclusion

The dispositional variables of self-efficacy, self-regulation and motivation can foster learning and student retention. Self-efficacy promotes the concept that each task can be accomplished. When each task is completed the learner builds a stronger self-efficacy and promotes motivation. Self-regulation focuses on learners' setting goals, developing plans to complete the goals, working towards competing the plans, and finally on an evaluation of the plans' outcome through reflection, refining and redirection (Bandura, 1986).

Students generally will be unaware of the above variables. Teachers, however need to be aware of them and then become proactive in developing courses based on these principles.

As more institutions of higher education use web-based courses to attract new students, the retention of future students becomes more critical.

The current status of available literature certainly provides a significant basis for seeking a viable solution to the problem of student retention.

Future research directed toward the combination of self-efficacy, self-regulation and motivation will provide the needed basis for the development of a comprehensive learning theory which will make a serious positive impact on student learning and student retention.

Chapter III

Methodology

The methods that were used to collect and analyze the data needed to address the research questions posed for this study are presented in this chapter. The topics that are included in this discussion are: restatement of the problem, research design, setting for the study, participants, instrumentation, data collection procedures, and data analysis. Each of these topics is presented separately.

Restatement of the Problem

The purpose of this research is to examine the relationship between student learning styles, attitudes toward web-based coursework, and their outcomes in these types of classes.

Research Design

A descriptive, correlation research design was used in this study to determine the existence of a relationship among variables, without implying causation. The independent variable in this type of research design was not manipulated and no intervention or treatment was provided to the participants.

Setting for the Study

A community college located in a county that provides postsecondary educational opportunities for residents of a single county provided the setting for this study. Twenty-one school districts are included in the catchment area served by this community college. The county is geographically diverse, with citizens living in rural, suburban, and urban areas. According to the 2000 census, 436,141 people were living in this county. The majority of the people were Caucasian, with African Americans the next largest ethnic group. Other ethnic populations included in the population were: American Indian/Alaskan native, Asian/Pacific Islander, and Hispanic/Latino. The majority of people over 25 had attained a high school diploma, with 16.2%

of the population having a bachelor's degree or higher. The major city in this county is considered economically depressed, with a median household income of \$28,015. African Americans comprise the largest ethnic group in this city, followed by Caucasians. The majority of people over 25 years had high school diplomas, with 11.3% of the citizens reporting completion of a bachelor's degree or higher (US Census, 2000).

The community college serves a total of 10,320 students, including 3,034 (29.4%) who are attending full-time and 7,286 (70.6%) who are attending part-time. The majority of students were female (n=6,376, 61.8%) and White (n=6,871, 66.6%). African American students (n=1,709, 16.6%) were the second largest ethnic group enrolled at the college. The average age of the students was 26.7 years. Table 8 presents the demographic characteristics of the students at this community College.

Table 8

Demographic Characteristics of the Sample (2006)

Community College Student Demographics	Number	Percent
Student Status		
Full time	3,034	29.4
Part time	7,286	70.6
Gender		
Male	6,376	61.8
Female	3,944	38.2
Ethnicity		
African American	1,709	16.6
American Indian/Alaskan Native	99	1.0
Asian/Pacific Islander	96	0.9
Hispanic	269	2.6
White	6,871	66.6
Unstated	1,276	12.4
Age (Mean age = 26.7 years)		
Under 21	3,613	35.0
21 to30	3,698	35.8
Over 30	2,957	28.7
No report	52	0.5
Residence Area		
Major Urban Area	3,421	33.1
County	5,062	49.1
State	1,772	17.2
Out of state	65	0.6

Note: Office of Research, Community College, 2006

At the time of the present study, the community college offered 67 degree programs, 32 certificate programs, and 10 transfer programs. Some courses within these programs are offered using distance learning technology that involves the Internet.

Participants

The participants in this study were students at Mott Community College who were enrolled in web-based courses. At the present time, four courses were available on-line in the curriculum areas (i.e., Quality Assurance, Business Management and Computer Technology). These students were asked to complete a survey to determine their learning styles and measure their attitudes toward web-based coursework. In addition, students were asked to provide personal and professional characteristics on a short demographic survey. This survey also

included questions on their experiences with use of computers and Internet, as well as self-reported academic outcomes.

Instruments

The *Motivation Strategies for Learning Questionnaire* (MSLQ), developed by Pintrich, Smith, Garcia, and McKeachie (1993) was purported to measure “college students’ motivational orientations and their use of different learning strategies for a college course” (p. 3). The MSLQ is from the program on instructional processes and education outcomes at the National Center for Research to Improve Postsecondary Teaching and Learning, University of Michigan, Ann Arbor, Michigan. A large number of empirical studies have been published that used the MSLQ survey were administered to 4th – 6th grades, middle school, high school, adults, graduate and undergraduate students in countries including Canada, South Korea, Israel, Greece, Norway, Finland, Germany, Australia, and the United States (Duncan & McKeachie, 2005).

The MSLQ assesses learning strategies and motivation levels of student with 15 subscales. The subscales are independent and each has been tested for internal consistency. Table 9 presents the 15 subscales including Pintrich’s et al. (1993) short descriptions and the number of items, and alpha coefficients for each scale.

Table 9

MSLQ Subscales

Subscale	Description	Number of Items	Alpha Coefficient	
			Pintrich et al.	Present Study
Motivation Scales				
Intrinsic Goal Orientation	Students' perceptions of reasons why they are engaging in a learning task. Goal orientation refers to students' general goals or orientation to courses as a whole.	4	.74	.79
Extrinsic Goal Orientation	Students' perceptions of reasons why they are participating in a class (grades, rewards, performance, evaluation by others, and competition).	4	.62	.40
Task value	Students' evaluations of how interesting, how important, and how useful the task is (Why am I doing this?)	6	.90	.70
Control of learning beliefs	Students' beliefs that their efforts to learn will result in positive outcomes.	4	.68	.32
Self-efficacy for learning and performance	Two aspects of expectancy are measured on this scale: expectancy for success and self-efficacy. Expectancy for success refers to performance expectations and relates specifically to task performance. Self-efficacy is a self-appraisal of one's ability to master a task.	8	.93	.76
Test anxiety	Test anxiety is thought to have two components: a worry (cognitive) component and an emotional (affective) component. The worry component refers to students' negative thoughts that can disrupt performance, while the emotional component refers to affect and physiological arousal aspects of anxiety.	5	.80	.69
Learning Strategies Scales				
Rehearsal	Basic rehearsal strategies involve reciting or naming items from a list to be learned. These strategies are assumed to influence the attention and encoding processes, but they do not appear to help students construct internal connections among the information or integrate the information with prior knowledge.	4	.69	.16
Elaboration	Strategies that help students store information into long-term memory by building internal connections between items to be learned. Elaboration strategies include paraphrasing, summarizing, creating analogies, and generative note-taking.	6	.76	.52
Organization	Strategies that help the learner select appropriate information and also construct connections among the information to be learned. Organizing strategies include clustering, outlining, and selecting the main idea in reading passages.	4	.64	.63
Critical thinking	Students self-report of application of previous knowledge to new situations to solve problems, reach decisions, or make critical evaluations with respect to standards of excellence.	5	.80	.16

Table continues

Subscale	Description	Number of Items	Alpha Coefficient	
			Pintrich et al.	Present Study
Metacognitive self-regulation	Metacognition refers to the awareness, knowledge, and control of cognition. Three general processes comprise metacognitive self-regulatory activities: planning, monitoring, and regulating.	12	.79	.64
Time and study environment	Students' ability to manage and regulate their time and study environments. Time management involves scheduling, planning, and managing study time. Study environment management refers to the setting where students do their class work.	8	.76	.81
Effort regulation	Students' ability to control their effort and attention in the face of distractions and uninteresting tasks.	4	.69	.30
Peer learning	Collaboration with peers has been found to have positive effects on achievement.	3	.76	.03
Help seeking	Seeking support of both peers and instructors. Good students know when they do not know something and are able to identify someone to provide them with assistance.	4	.52	.54

Each statement describes a learning strategy or a motivation. Students were asked to indicate the extent to which the statement was not at all true of them (value = 1) to very true of them (value = 7). The students were not given specific definitions (e.g., somewhat true, true, etc.) that relate to the incremental ratings from 2 to 6.

The Learning Strategies scale include 50 items to determine if students employ deep or surface methods of learning. Thirty-one items on the Learning Strategies scale measure cognitive and metacognitive strategies. The remaining 19 items measure students' management of different resources. Sample questions included:

35. I usually study in a place where I can concentrate on my course work.
41. When I become confused about something I'm reading for this class, I go back and try to figure it out.

Thirty-one items are included on the Motivation subscale and are used to determine the level of student motivation. Sample questions included:

3. When I take a test I think about how poorly I am doing compared with other students.

12. I'm confident I can learn the basic concepts taught in this class.

Reliability.

Each subscale has been examined for internal consistency, reliability. The Cronbach alpha coefficients ranged from .52 for help seeking to .93 for self-efficacy for learning and performance (Pintrich et al., 1993). Although some of the alpha coefficients were less than typically expected, the subscales with low alpha coefficients had fewer items (3 or 4). Cronbach alpha was attenuated as the number of items diminished. The present study computed Cronbach alpha coefficients to determine the reliability with students in the present study. The responses of the students in the present study were used to obtain a measure of internal consistency reliability using Cronbach alpha coefficients. The obtained alpha coefficients were not as high as those reported by Pintrich et al. These results may be due to the small number of participants in the present study.

Variables in the Study

The dependent variable for this study is the students' self-reported outcomes in web-based courses at mid-term. As students who are enrolled at mid-term in web-based courses usually remain in the class to the end of the semester, this grade reflects student retention in these types of courses. Students generally drop-out of web-based courses prior to the mid-term exam.

The independent variables that were measured in this study include:

- Gender
- Age
- Class level
- Ethnicity
- Employment
- Number of credit hours completed

- Number of credit hours enrolled in Fall semester
- Number of credit hours on-line in Fall semester
- Reasons for taking on-line courses
- Expected grades in on-line courses.

The dependent variables that were measured in the study include:

- Motivation scales
 - Intrinsic goal orientation
 - Extrinsic goal orientation
 - Task value
 - Control of learning beliefs
 - Self-efficacy for learning and performance
 - Test Anxiety
- Learning strategies scales
 - Rehearsal
 - Elaboration
 - Organization
 - Critical thinking
 - Metacognitive self-regulation
 - Time and study environment
 - Effort regulation
 - Peer learning
 - Help seeking.

Data Collection Procedures

Following approval from the community college administration and the Human Investigation Committee (HIC), the data collection process began. Blackboard at Mott Community College was used to distribute surveys and obtain responses from the students.

The surveys included a copy of the information sheet approved by the HIC that indicated the purpose and importance of the study, assurances of confidentiality, and directions for completing and returning the survey information to the researcher. The format followed the template provided by the HIC committee.

Students currently enrolled in a web-based course were directed to a website using the link provided in the Blackboard Learning System: Basic Edition (6.31.505) by their instructors. The website included both the information sheet and the MSLQ. The questionnaires were available after the mid point of the semester at approximately the same time students received their mid-term grades. Students were asked to complete the questionnaires and follow directions to submit them through the website. Although students could be identified through their Blackboard accounts, their responses to the survey, without any identifying information, were downloaded to a separate data base developed specifically for the study. The researcher received the data as an Excel file.

As the students who completed the survey could not be identified, a general follow-up Blackboard announcement was posted as a reminder one week following initial distribution of the survey, with a second Blackboard announcement reminder posted two weeks later. All data collection was considered complete three weeks following initial distribution of the surveys.

Data Analysis

All data collected from the questionnaires were analyzed using SPSS – Windows, ver. 15.0. Descriptive statistics, including measures of central tendency (means and medians)

variability (standard deviations and ranges), correlations, frequency distributions, and crosstabulations were computed to provide a profile of the participants. In addition, descriptive statistics also were used to provide baseline data on the MSLQ subscales.

The research questions were addressed using correlational methods and multiple linear regression analysis. All decisions on the statistical significance of the findings were made using a nominal alpha level of .05. Table 10 presents the data analyses that were used to address each of the research questions developed for the study.

Table 10
Statistical Analysis

Research Questions	Variables	Statistical Analysis
1. Can students' self-reported outcomes in web-based courses at mid-term be predicted from subscales measuring motivation and learning strategies scales on the Motivation Strategies for Learning Questionnaire (MSLQ)?	<p>Criterion Variable Self-reported outcomes in web-based courses at mid-term</p> <p>Predictor variables Subscales measuring motivation and learning strategies on the MSLQ</p>	Pearson product moment correlations were used to obtain zero-order correlations between the criterion and predictor variables.
2. Is there an association between reasons that students take web-based courses and students' self-reported outcomes in web-based courses at mid-term?	<p>Reasons that students take web-based courses</p> <p>Students' self-reported outcomes in web-based courses at mid-term</p>	Pearson product moment correlations were used to examine the strength and direction between the dichotomous variables (reasons that students take web-based courses) and students self-reported outcomes in web-based courses at mid-term.
3. Is there an association between reasons that students take web-based courses and the number of credit hours completed, number of credit hours earned in traditional classes, and number of credit hours earned in on-line courses?	<p>Reasons that students take web-based courses</p> <p>Number of credit hours completed</p> <p>Number of credit hours earned in traditional classes</p> <p>Number of credit hours earned in on-line courses</p>	Pearson product moment correlations were used to examine the strength and direction between the dichotomous variables (reasons that students take web-based courses) and college-related variables (number of credit hours completed, number of credit hours earned in traditional courses, number of credit hours earned in on-line courses).

Chapter IV

Results of Data Analysis

The results of the data analyses that were used to describe the sample and address the three research questions are presented in this chapter. This chapter is divided into three sections. The first section uses frequency distributions and measures of central tendency and dispersion to provide a profile of the students in the study. Descriptive statistics are used to present baseline statistics on the subscales measuring the “Use of the Motivated Strategies for Learning Questionnaire” (MSLQ) in the second section. The research questions are addressed in the third section of the chapter.

The purpose of this study was to examine the relationships between student self-regulation, self-efficacy, motivation toward web-based coursework, self-reported course outcomes, and reasons for enrolling in web-based courses on student retention in web-based courses.

A total of 1,091 students were enrolled in on-line courses during the Winter 2007 semester. Of this number, 181 students who continued the course through the midterm were asked to participate in the study. Twenty-one students completed the survey for a response rate of 11.6%.

Description of the Sample

The students were asked to provide information on their personal characteristics. Their responses were summarized using frequency distributions. The results of this analysis are presented in Table 11.

Table 11

Frequency Distributions
Personal Characteristics

Personal Characteristics (N = 21)	Number	Percent
Gender		
Male	10	47.6
Female	11	52.4
Age		
Less than 20 years	3	14.3
21 to 30 years	9	42.8
31 to 40 years	7	33.3
41 to 50 years	1	4.8
Over 50 years	1	4.8
Ethnicity		
Caucasian	18	90.0
Middle Eastern	2	10.0
Missing	1	

The majority of students (n = 11, 52.4%) indicated their gender as female. Nine (42.8%) students were between 21 and 30 years of age, with 7 (33.3%) indicating their ages were between 31 and 40 years. One (4.8%) participant was over 50 years of age. Eighteen (90.0%) participants reported their ethnicity as Caucasian. One student did not provide his/her ethnicity on the survey.

The students were asked to indicate their class level and employment status on the survey. Their responses were summarized using frequency distributions. The results are presented in Table 12.

Table 12

Frequency Distributions
College and Employment Status

College and Employment Status (N = 21)	Number	Percent
College Level		
Freshman	5	25.0
Sophomore	13	65.0
Other	2	10.0
Missing	1	
Employed		
Yes	17	81.0
No	4	19.0
Number of hours worked in a typical week		
6 to 10 hours	1	5.9
11 to 15 hours	2	11.8
16 to 20 hours	1	5.9
More than 20 hours	13	76.5
Missing	4	

Most of the participants (n = 13, 65.0%) indicated they were sophomores, with 2 (10.0%) indicating “other.” Other could be students who were returning for additional coursework after completing their associate’s degrees. Seventeen (81.0%) students were employed. The majority of these students (n = 13, 76.5%) were working more than 20 hours a week.

The students were asked about their college backgrounds. The responses to these questions were summarized using frequency distributions. Table 13 presents results of these analyses.

Table 13

Frequency Distributions
College Coursework

College Coursework (N = 21)	Number	Percent
Number of credit hours completed		
13 to 30	5	25.0
31 to 50	7	35.0
More than 50	8	40.0
Missing	1	
Hours completed in a traditional classroom		
None	2	9.5
1 to 4 hours	1	4.8
9 or more hours	18	85.7
Hours completed in on-line courses		
No credit hours	1	4.8
1 to 4 credit hours	4	19.0
5 to 8 credit hours	5	23.8
9 or more credit hours	11	52.4
Credit hours enrolled in winter semester		
1 to 3 hours	1	4.8
4 to 6 hours	6	28.6
7 to 9 hours	3	14.3
10 to 12 hours	4	19.0
13 or more credit hours	7	33.3
Credit hours enrolled in on-line courses in winter semester		
1 to 3 hours	6	28.6
4 to 6 hours	8	38.1
7 to 9 hours	3	14.3
10 to 12 hours	4	19.0

The largest group of students had completed more than 50 credit hours (n = 8, 40.0%). One student did not indicate the number of credit hours she or he had completed. Eighteen (85.7%) students reported they had completed 9 or more credit hours in a traditional classroom, with 11 (52.4%) students indicating they had completed 9 or more credit hours in on-line courses. Seven (33.3%) students were enrolled for 13 or more credit hours, with 6 (28.6%) students enrolled for 4 to 6 credit hours. Eight (38.1%) students reported they were enrolled in 4 to 6 credit hours in on-line courses during the Winter semester.

Using a 3-point scale ranging from not at all important to very important, the students were asked to indicate how important certain elements were in deciding to take on-line courses. Frequency distributions were used to summarize the responses to these questions. Table 14 presents results of these analyses.

Table 14
Frequency Distributions
Importance of Reasons for Taking On-line Courses

Reasons for Taking On-line Courses	Not at all Important		Somewhat Important		Very Important	
	N	%	N	%	N	%
Fits into my schedule	0	0.0	0	0.0	21	100.0
I can control the pace of learning	2	9.5	7	33.3	12	57.2
The flexible schedule allows me to take classes that don't fit into the traditional course schedule	1	4.8	4	19.0	16	76.2
It will help me to develop 21 st century technology skills	8	38.1	9	42.9	4	19.0
I am comfortable learning in an on-line format	1	5.0	9	45.0	10	50.0
I like being able to interact with my instructor and classmates on a 24/7 basis	7	33.3	7	33.3	7	33.3
I believe this on-line course will enhance my skills in the future (lifelong learning)	3	15.0	8	40.0	9	45.0
I think this would be easier than a traditional class	9	42.9	9	42.9	3	14.2
It was the only format available for taking this class	13	61.9	6	28.6	2	9.5

All participants indicated taking on-line courses because it fit into their schedule was very important, with 16 (76.2%) indicating the flexible schedule allowed them to take classes that didn't fit into the traditional schedule was very important. Twelve (57.2%) students considered that controlling the pace of their learning was very important and 10 (50.0%) reported

that being comfortable learning in an on-line format was very important in deciding to take on-line courses.

Students self-reported their grades in the on-line courses in which they were presently enrolled. An A was coded as an 8.0, with a E coded as a 0.0. The mean average was 4.60 (sd = 1.47), with a median of 4.00. The range of scores was from 2.50 to 8.00, with higher scores indicating higher grades at mid-term. Five students did not provide their grades on the survey.

Scaled Variables

The mean scores for the 15 subscales that were measured using the Motivated Strategies for Learning Questionnaire (MSLQ; Pintrich, Smith, Garcia, & McKeachie, 1991) were obtained by summing the numeric values associated with the responses to the questions on each subscale and then dividing by the number of questions measuring the subscale. The students rated the items on the MSLQ using a 7-point scale ranging from 1 for not at all true of me to 7 for very true of me. Higher scores on these subscales reflected a more motivated orientation. The descriptive statistics used to summarize these data are presented in Table 15.

Table 15
Descriptive Statistics
Motivated Strategies for Learning Questionnaire

Subscale	Number	Mean	SD	Median	Range	
					Minimum	Maximum
Intrinsic goal orientation	21	5.76	.99	6.00	3.50	7.00
Extrinsic goal orientation	21	5.21	1.30	5.25	1.75	7.00
Task value	21	5.61	.86	5.50	3.67	7.00
Control of learning beliefs	21	5.80	.83	5.50	4.50	7.00
Self-efficacy	21	5.70	.73	6.00	4.00	6.63
Test anxiety	21	3.97	1.31	4.00	2.00	6.80
Rehearsal	20	3.24	1.00	3.13	1.00	5.25
Elaboration	20	3.81	1.05	4.00	1.00	5.17
Organization	20	5.80	.86	6.00	3.50	7.00
Critical thinking	20	3.39	.86	3.40	1.00	4.80
Metacognitive self-regulation	20	4.28	.83	4.46	2.58	5.58
Time and study environment	20	4.43	1.34	4.81	1.75	6.13
Effort regulation	20	4.33	1.11	4.38	1.00	5.75
Peer learning	20	3.48	1.22	3.33	1.00	7.00
Help seeking	20	3.68	1.14	3.75	1.75	5.75

Intrinsic goal orientation. Intrinsic goal orientation measures the extent to which a student perceives she/he is engaged in a learning task. The mean score on this subscale was 5.76 (sd = .99) with a range from 3.50 to 7.00.

Extrinsic goal orientation. The complement of intrinsic goal orientation is extrinsic goal orientation. This subscale is concerned with the degree to which students are involved in a task because of grades, rewards, performance, evaluation by others, and competition. The range of scores on this subscale was from 1.75 to 7.00, with a mean of 5.21 (sd = 1.30).

Task value. This subscale measures students' perceptions of how interesting, how important, and how useful the task is. The mean score for this subscale is 5.61 (sd = .86), with a range of actual scores from 3.67 to 7.00.

Control of learning beliefs. Students' beliefs that their efforts to learn can result in positive outcomes was measured with this subscale. The mean score for control of learning beliefs was 5.80 (sd = .83), with actual scores ranging from 4.50 to 7.00.

Self-efficacy. This subscale measures expectancy for success and self-efficacy. Expectancy for success is a measure of task performance, while self-efficacy is a self-appraisal of a students' ability to master a task. The mean score for this subscale was 5.70 (sd = .73), with a range of actual scores from 4.00 to 6.63.

Test anxiety. Test anxiety is an affective component of motivation and is negatively related to expectancy for success and academic performance. The mean score for test anxiety is 3.97 (sd = 1.31), with scores ranging from 2.00 to 6.80. Higher scores on this subscale reflect greater test anxiety.

Rehearsal. This subscale measures the extent to which students use rehearsal strategies to recite or name items from a list to be learned (rote learning). The mean score for this subscale is 3.24 (sd = 1.00), with actual scores ranging from 1.00 to 5.25. Higher scores indicate the greater use of rehearsal as a cognitive and metacognitive strategies.

Elaboration. Strategies involving elaboration allow students to store information in long-term memory by developing internal connections among items that need to be learned. The range of actual scores on this subscale ranged from 1.00 to 5.17, with a mean score of 3.81 (sd = 1.05).

Organization. Organization strategies are used to select appropriate information and also construct connections among information to be learned. The mean score on this subscale was 5.80 (sd = .86), with a range of actual scores from 3.50 to 7.00.

Critical thinking. This subscale measures the extent to which students report the use of problem solving strategies that include the application of previous knowledge to new situations. The mean score for critical thinking was 3.39 (sd = .86), with actual scores ranging from 1.00 to 4.80.

Metacognitive self-regulation. Three general processes are measured on this subscale: planning, monitoring, and regulating. The mean score for this subscale was 4.28 (sd = .83), with a range of actual scores from 2.58 to 5.58.

Time and study environment. In addition to self-regulation of cognition, students must be able to manage and regulate their time and study environments. Time management involves scheduling, planning, and managing one's study time. The mean score on this subscale was 4.43 (sd = 1.34), with actual scores ranging from 1.75 to 6.13.

Effort regulation. This subscale measures a commitment to completing study goals, even when there are difficulties or distractions. The range of actual scores on effort regulation was from 1.00 to 5.75, with a mean score of 4.33 (sd = 1.11).

Peer learning. This subscale measures the extent to which students collaborate with their peers to obtain higher academic results. The mean score on this subscale was 3.48 (sd = 1.22), with a range of scores from 1.00 to 7.00.

Help seeking. Help seeking is the extent to which students learn to manage support of others, including both peers and instructors. Student achievement is improved when students know when to seek support. The mean score for this subscale was 3.68 (sd = 1.14), with actual scores ranging from 1.75 to 5.75.

The responses to reasons for taking on-line courses were summarized using frequency distributions. The results of these analyses are presented in Table 16.

Table 16
Frequency Distributions
Reasons for Taking On-line Courses

Reasons for taking on-line courses (N = 21)	Not at all important		Somewhat Important		Very Important	
	N	%	N	%	N	%
Fits into my schedule	0	0.0	0	0.0	21	100.0
Can control the pace of learning	2	9.5	7	33.3	12	57.1
Flexible schedule allows me to take classes that do not fit into the traditional course schedule	1	4.8	4	19.0	16	76.2
It will help me to develop 21 st century technology skills	8	38.1	9	42.9	4	19.0
I am comfortable learning in an on-line format	1	5.0	9	45.0	10	50.0
I like being able to interact with my instructor and classmates on a 24/7 basis	7	33.3	7	33.3	7	33.3
I believe this on-line course will enhance my skills in the future (lifelong learning)	3	15.0	8	40.0	9	45.0
I think this would be easier than a traditional class	9	42.9	9	42.9	3	14.2
It was the only format available for taking this class	13	61.9	6	28.6	2	9.5

Fits into my schedule. The 21 (100.0%) students who responded to the study indicated that fitting into their schedule was very important.

Can control the pace of learning. The majority of students (n = 12, 57.1%) considered that they could control the pace of learning was very important, with 7 (33.3%) reporting this reason for taking on-line courses was somewhat important.

Flexible schedule. As a reason for taking on-line courses, the flexible schedule allows students to take classes that do not fit into the traditional course schedule was very important to 16 (76.2%) students.

Develop 21st century technology skills. The largest group of students (n = 9, 42.9%) considered this reason for taking on-line courses as somewhat important, with 8 (38.1%) students reporting this reason was not at all important.

Comfortable learning in an on-line format. Ten (50.0%) students considered this reason for taking on-line courses was very important, with 1 (5.0%) indicating it was not at all important.

Able to interact with instructor and classmates. Seven (33.3%) students each answered that this reason for taking on-line classes was not at all important, somewhat important, and very important.

On-line course will enhance my skills in the future. Nine (45.0%) students indicated that this reason for taking an on-line course was very important. Eight (40.0%) students considered this reason to be somewhat important.

Easier than a traditional course. Nine (42.9%) students reported that this reason for taking an on-line course was not at all important, with an additional 9 (42.9%) students indicating this reason was somewhat important.

Only format available for taking this course. Thirteen (61.9%) participants reported that this reason for taking on-line courses was not at all important. Two (9.5%) students considered this reason to be very important.

Research Questions

Three research questions were developed for this study. Pearson product moment correlations were used to answer each of these questions, with all decisions on the statistical significance of the findings based on a criterion alpha level of .05.

Research question 1. Can students' self-reported outcomes in web-based courses at mid-term be predicted from subscales measuring motivation and learning strategies scales on the Motivation Strategies for Learning Questionnaire (MSLQ)?

Because of the low response rate, the planned stepwise multiple linear regression analysis could not be completed. To answer this research question, the 15 subscales of the MSLQ measuring motivation and learning strategies were correlated with self-reported outcomes in web-based courses at mid-term. Results of these analyses are presented in Table 17.

Table 17

Pearson Product Moment Correlations
 Motivated Strategies for Learning Questionnaire
 by Student Self-Reported Academic Outcomes at Mid-Term

Subscale	Number	r Value	Sig of r
Intrinsic goal orientation	21	.17	.452
Extrinsic goal orientation	21	-.29	.203
Task value	21	.27	.239
Control of learning beliefs	21	-.01	.998
Self-efficacy	21	.29	.207
Test anxiety	21	-.42	.060
Rehearsal	20	-.35	.136
Elaboration	20	-.22	.346
Organization	20	.18	.446
Critical thinking	20	-.35	.132
Metacognitive self-regulation	20	-.05	.840
Time and study environment	20	-.30	.199
Effort regulation	20	-.38	.102
Peer learning	20	-.29	.209
Help seeking	20	.09	.702

The results of the correlations between the 15 subscales and student self-reported academic outcomes were not statistically significant. Based on these findings, it does not appear that students' self-reported academic outcomes were correlated with the motivated strategies for learning.

Research question 2. Is there an association between reasons that students take web-based courses and students' self-reported outcomes in web-based courses at mid-term?

Reasons that students take on-line courses were correlated with their self-reported academic outcomes using Pearson product moment correlations. Results of these analyses are presented in Table 18.

Table 18

Pearson Product Moment Correlations
Reasons for Taking On-line Courses
by Student Self-Reported Academic Outcomes at Mid-Term

Reasons for taking on-line courses	Number	r Value	Sig of r
Fits into my schedule	21	--	--
Can control the pace of learning	21	-.08	.726
Flexible schedule allows me to take classes that do not fit into the traditional course schedule	21	-.26	.250
It will help me to develop 21 st technology skills	21	.16	.484
I am comfortable learning in a on-line format	20	.24	.312
I like being able to interact with my instructor and classmates on a 24/7 basis	21	-.19	.404
I believe this on-line course will enhance my skills in the future (lifelong learning)	20	.26	.277
I think this would be easier than a traditional class	21	.27	.244
It was the only format available for taking this class	21	-.09	.700

The correlations between each of the reasons for taking on-line courses and the students' self-reported academic outcomes at mid-term were not statistically significant. As a result, it does not appear that reasons for taking on-line courses were influencing academic achievement.

Research question 3. Is there an association between reasons that students take web-based courses and the number of credit hours completed, number of credit hours earned in traditional classes, and number of credit hours earned in on-line courses?

The responses to the reasons that students take web-based courses and the number of credits hours completed, number of credit hours earned in traditional classes, and number of credit hours earned in on-line courses were correlated using Pearson product moment correlations. The results of these analyses are presented in Table 19.

Table 19

Pearson Product Moment Correlations
Reasons for Taking On-line Courses
by Credit Hours

Reasons for taking on-line courses	<u>Credit Hours</u>									
	Completed		Completed in Traditional Classes		Completed in On-line Courses		Enrolled in Winter Semester		Enrolled in On-line Courses in Winter Semester	
	r	p	r	p	r	p	r	p	r	p
Fits into my schedule	--	--	--	--	--	--	--	--	--	--
Can control the pace of learning	-.18	.46	-.19	.408	.38	.093	-.15	.519	-.16	.487
Flexible schedule allows me to take classes that do not fit into the traditional course schedule	.33	.157	-.06	.792	.06	.785	.12	.600	.36	.107
It will help me to develop 21 st technology skills	-.31	.186	.01	.983	.14	.539	-.10	.659	.18	.434
I am comfortable learning in a on-line format	-.31	.193	.03	.887	.25	.286	-.17	.481	.35	.135
I like being able to interact with my instructor and classmates on a 24/7 basis	.00	1.000	.38	.087	.30	.192	.18	.448	.22	.340
I believe this on-line course will enhance my skills in the future (lifelong learning)	-.52	.024	.17	.477	.04	.883	-.19	.421	.28	.226
I think this would be easier than a traditional class	-.57	.009	-.16	.490	.12	.608	-.06	.801	.03	.906
It was the only format available for taking this class	.14	.553	-.31	.174	-.06	.787	.23	.319	-.50	.022

These analyses provided evidence of three statistically significant correlations. Students who had completed fewer credit hours were more likely to perceive that the on-line course would enhance their skills in the future, $r = -.52$, $p = .024$, and thought this course would be easier than a traditional class, $r = -.57$, $p = .009$. Students who took fewer numbers of credit hours enrolled in on-line courses in the Winter semester were more likely to have positive perceptions that the course was the only format available for taking the course, $r = -.50$, $p = .022$. The remaining reasons for taking on-line courses were not related to the number of credit hours taken.

Summary

This chapter has presented the results of the data analyses that were used to describe the sample and address the research questions developed for this study. The conclusions and recommendations based on these findings are provided in Chapter V.

Chapter V

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Summary

This chapter provides a brief restatement of the purpose of the study, a summary review of the major elements of the research study, and a discussion of the findings. Also included in the study are conclusions based on findings, as well as recommendations for practice and future study.

The purpose of this study was to examine the relationship between student self-regulation, self-efficacy, and motivation toward web-based coursework, self-reported course outcomes, and reasons for enrolling in web-based courses on student retention in web-based courses.

The arrival of the Internet and the web browser has led to a worldwide explosion of web-based virtual classes as a form of instructional delivery systems among institutions of higher education (Moore & Kearsley, 2004). Web-based instructional delivery systems provide students with an option of selecting courses from major universities or local colleges without constraints of time and place. This flexibility provides students with opportunities for expanded learning and academic achievement (Smith-Winking & Diaz, 2004).

Adult students enroll in higher education because of the technology demands of the workplace and society, as well as family responsibilities. These adult students still look for lifelong learning that provide a formal education without constraints of attending a face-to-face traditional class (Smith-Winking & Diaz, 2004).

In 2001, the National Center for Education Statistics (NCES) published results of a survey of distance education in postsecondary institutions. In 2000-2001, 56% of all degree granting institutions offered distance education courses. An additional 12% of the institutions

reported that they would be offering a form of distance education courses by 2004. During the 2000-2001 academic years, an estimated 3,077,000 students were enrolled in 127,400 different distant education courses offered in 2-year and 4-year institutions. The majority of institutions used the Internet as the delivery method for their distance education courses (NCES).

Growing concerns about retention in web-based courses have many administrators questioning what they can do to keep their students enrolled in online courses, especially as more institutions of higher education use web-based courses to attract new students. A paucity of web-based retention data has been collected in research studies because of the short history of this course delivery method. Oblender (2002) reported that the average dropout rate for distance learning college classes in the United States was estimated to be 50% of enrolled students.

Cowan's University Study (as cited in Thompson, 1997) found that drop-out rates in distance education were higher than for on-campus courses. Students gave several reasons for withdrawals, including: work, family, and study commitments. These students typically had completed fewer courses and had lower grades than students who persisted.

Part-time students often have difficulty maintaining equilibrium in their lives due to pressures from jobs or individual domestic situations. If an additional pressure increases, equilibrium can be upset causing the student to become "at risk" for dropping out of college courses (Cookson, 1990, p. 62).

The Osborn (2001) study developed a survey that could be administered to web-based students early in the semester. This assessment could allow time for students to schedule tutoring and problem solving that could assist in increasing retention in a web-based course. The Brown (2004) study found gender along with reading and writing skill levels contributed to student retention in web-based courses. The Carr (2000) study found that student retention was low in web-based courses that were taught by inexperienced faculty. Brown (2004) developed an

instrument to predict student retention that could be administered prior to the start of the web-based course. Morris, Wu, and Finnegan (2005) found students' high school GPA and math scores were predictors of student retention in web-based courses. Based on results reported by Moan and Dershiwsky (2002), students with time management skills were less at risk of not completing the web-based course.

Self-efficacy is a person's judgment of his/her capabilities in organizing and executing a course of action required to attain a specific performance. (Schunk, 1991, p. 207). "Since Bandura's (1977) seminal article on self-efficacy, much research has classified and extended the role of self-efficacy as a mechanism underlying behavioral change, maintenance, and generalization" (Schunk, 1991, p. 207). Self-efficacy beliefs, influence what one wishes to do. They motivate one regarding the degree of effort and persistence. Bandura indicated that these same beliefs influence the outcomes of the regulated activity (Schunk & Pajares, 2001).

An individual's concept of self-efficacy can cause that individual to perceive his/her level of ability to perform in direct correlation to the perceived thoughts of self-efficacy. Two people with the same skill level can perform differently depending on the level of individual self-efficacy which these persons believe they have (Bandura, 1993, p. 118).

Self-Regulation

Studies of self-regulated students demonstrate, according to Zimmerman, the following characteristics:

- They are familiar with and know how to use a series of cognitive strategies (repetition, elaboration and organization), which help them to attend to, transform, organize, elaborate and recover information.
- They know how to plan, control and direct their mental processes towards the achievement of personal goals (metacognition).

- They show a set of motivational beliefs and adaptive emotions, such as a high sense of academic self-efficacy, the adoption of learning goals, the development of positive emotions towards tasks (e.g. joy, satisfaction, enthusiasm), as well as the capacity to control and modify these, adjusting them to the requirements of the task and to the specific learning situation.
- They plan and control the time and effort to be used on tasks, and they know how to create and structure favorable learning environments, such as finding a suitable place to study and seeking help from teachers and classmates when they have difficulties.
- To the extent that the context allows it, they show greater efforts to participate in the control and regulation of academic tasks, classroom climate and structure (e.g. how one will be evaluated, task requirements, the design of class assignments, organization of work teams).

Self-regulated students are able to put into play a series of volitional strategies, aimed at avoiding external and internal distractions in order to maintain their concentration, effort and motivation while performing academic tasks. (Zimmerman, 1998, 2002; Montalvo & Torres, 2004).

Motivation can be defined as “purposeful behavior that is ultimately directed toward the fundamental goal of inclusive fitness moreover, motivation can be measured, “in terms of individual differences in covarying categories of behaviors and interests.” Categories covary “because they are guided and directed by putative cognitive structures called motives.” (Bernard et al, 2002, p. 129).

Motivation can be divided into two categories:

- Extrinsic motivation, which occurs when as a person engages in learning simply for a reward or for avoidance of a punishment (Dev, 1997).

- Intrinsic motivation, which occurs for its own sake, such as performing an action for which the only rewards are the spontaneous affects and cognition that accompany it. (Woldkoski,1985)

Academic motivation can be an internal state or condition that activates behavior and gives it direction. Or it can be a desire or want that energizes and directs goal-oriented behavior. Either influences the intensity and direction of behavior (Huitt, 2001).

The overall importance of academic motivation is so great that students who are motivated to learn will have greater success in learning than those who are not. “Additionally, students who learn well will be more motivated to do so in the future.” (Hodges, 2004)

In discussing theories of motivation, Bandura identifies the attribution theory, expectancy-value theory, and goal theory. (Hodges, 2004)

Since cognitive activity is a major source of motivation students will acquire self-motivation “and guide their actions anticipatorily through the exercise of forethought.” By identifying likely outcomes of their personal actions, they are more able to set goals for themselves and plan courses of action that will result in their desired effects. (Bandura, 1989, p 729)

The attribution theory of motivation is a student’s “emotional reaction” (Pintrich & DeGroot, 1999, p34) to a task. The student associates success or failure of self with “attributions”. These attributions are either internal or external and are under their control or not under their control (Huitt, 2001). Test anxiety is known to be a major component of the attribution theory in the classroom and can be associated with a student’s metacognition, cognitive strategies, and task management. (Pintrich & DeGroot, 1999, p34)

The expectancy value theory of motivation can be defined as a student’s perceived personal competence, self-efficacy, attribution style and control. (Pintrich & DeGroot, 1999)

Students who believe they have the ability to perform the task are more likely to take responsibility for the outcome. Research has suggested that “students who believe they can complete a task, use more cognitive strategies and are more likely to persist at the task” (Pintrich & DeGroot, 1990, p. 34). Vroom developed an equation to explain the expectancy theory:

$$\text{“Motivation} = \text{Perceived Probability of Success (Expectancy)} \times \text{Connection} \\ \text{of Success and Reward (Instrumentality)} \times \text{Value of Obtaining Goal} \\ \text{(Valance, Value;” Huitt, 2001)}$$

The student must have a high value of each variable to attain a high level of Motivation and required behavior.

The value theory of motivation consists of a student’s setting goals for the completion of a task. This motivation involves the student’s reason for doing the task. Students who believe that the task is important and worth completing will develop organized plans for the completion of the task. (Pintrich & DeGroot, 1999)

A current process of acquiring understanding of what future events can be has the power to transform them into the motivating and regulating behaviors needed in the present. As Bandura tells it, the cognized goals are translated into incentives and actions through the aid of self-regulatory mechanisms. (Bandura, 1989)

Methods

A descriptive, correlational research design was used in this study. The Motivated Strategies for Learning Questionnaire (MSLQ; Pintrich, Smith, Garcia, & McKeachie, 1993) and an original demographic survey were used to collect data from students at a single community college who were enrolled in web-based courses. A total of 181 students were asked to participate in the study, with 21 students completing the survey for a response rate of 11.6%. The

low participation rate may have been due to the perceived length of the survey, time constraints, and a lack of understanding of the need for participation in research projects.

Findings

Ten male and 11 female students participated in the study. Most of the students were less than 30 years of age and Caucasian. The students reported they were in their sophomore year and working full time. Most of the students had completed more than 30 credit hours. The majority of students had completed nine or more hours in web-based courses and was enrolled for 4 to 6 hours of web-based courses during the semester in which the study was conducted.

The most important reason for taking web-based courses was that the course “fits into my schedule” followed by “The flexible schedule allows me to take classes that don’t fit into the traditional course schedule.” Also considered important in deciding to take on-line courses was: “I can control the pace of learning, I am comfortable learning in an on-line format, and I believe this on-line course will enhance my skills in the future (lifelong learning).” The other listed reasons were rated as less important to the participants.

Research Questions

Three research questions were posed for this study. Each of these questions were addressed using Pearson product moment correlations, with all decisions on the statistical significance of the findings made using an alpha level of .05.

Research question 1: Can students’ self-reported outcomes in web-based courses at mid-term be predicted from subscales measuring motivation and learning strategies scales on the Motivation Strategies for Learning Questionnaire (MSLQ)?

The results of the Pearson product moment correlations between students’ self-reported academic outcomes at mid-term and their responses for the 15 subscales measured by the MSLQ were not statistically significant. These outcomes indicated that students’ academic outcomes were not related to their perceptions regarding motivation.

Research question 2: Is there an association between reasons that students take web-based courses and students' self-reported outcomes in web-based courses at mid-term?

The reasons that students take on-line courses were correlated with their self-reported academic outcomes at mid-term using Pearson product moment correlations. The correlations obtained from these analyses were not statistically significant, indicating that academic outcomes were unrelated to the importance of reasons for taking web-based courses.

Research question 3: Is there an association between reasons that students take web-based courses and the number of credit hours completed, number of credit hours earned in traditional classes, and number of credit hours earned in on-line courses?

Pearson product moment correlations were used to determine the extent to which the importance of reasons for taking on-line courses were correlated with the number of credit hours completed in traditional and on-line course. Three statistically significant correlations were obtained for these analyses. The number of courses completed was negatively associated with students' perceptions that they believed this on-line courses will enhance my skills in the future (lifelong learning) and that "this class would be easier than a traditional class." A statistically significant correlation in a negative direction was obtained between "it was the only format available for taking this class" and the number of credit hours enrolled in on-line course in winter semester. This result indicated that students who had fewer credit hours were more likely to rate the class as the only format available as important.

Discussion of the Findings

The students enrolled in on-line courses at the community college targeted in this study were taking a variety of classes. Some of these courses were offered in a traditional format, with others available only on-line. Many students preferred the on-line courses because the flexibility of the classes fit in with their schedules. They also thought that being able to control the pace of their learning was an important determinant in make the decision to take on-line courses. These reasons for taking on-line courses imply students' need for control over their learning. The

students did not appear to think that taking on-line courses would be easier than traditional courses.

Students' perceptions of the subscales measuring motivation strategies for learning were generally positive. Control of learning beliefs, organization, intrinsic goal orientation, and self-efficacy were positively endorsed by students as strategies for learning. These motivated strategies for learning are internalized by students and help provide control over their learning.

However, students did not appear to have strong motivation for rote learning (rehearsal) or critical thinking. Rote learning is a method of learning that is not stressed in elementary and secondary education at the present time. Students are not expected to memorize facts, but are being taught how to access information using resources that include the Internet and data base searches. Critical thinking is a process that students learn to apply previous knowledge, make links among concepts, and apply problem solving skills. This process may not have been learned before starting at the community college.

Personal control over learning appeared to be important both as reasons for enrolling in on-line courses, as well as in the use of strategies for learning. The students in this study were adults, with most over 21 years of age. They had experiences in life prior to taking these courses that may have contributed to their need for personal control.

The relationship between self-reported academic achievement in their on-line courses was not correlated with the 15 subscales on the MSLQ. This lack of statistically significant outcomes may have been due to the small sample size and the lack of variability in the responses to the MSLQ. The largest group of students who participated in the study generally had C grades.

Students who are enrolled in on-line learning may form a different type of student population. As more classes become available using the Internet, college instructors are going to have to be flexible and allow students to control their learning.

Limitations

The results of this study were influenced by the sample size. The results may have been different if more students who were enrolled in web-based courses had participated.

The study was conducted at a single community college that was offering web-based courses. The results may be different if the study had been conducted with students at more than one community college or if a baccalaureate college/university had been included in the study.

Recommendations for Practice

The results of this study provided evidence that reasons students are enrolling in web-based courses are important in planning the instructional delivery strategies that should be used to maximize student learning. The importance of students being able to control their learning has been shown to be an important consideration in these courses. To enhance retention in these courses, instructors should provide students with options for participation in the coursework. Many students do not have the time to enter chat rooms with other students to discuss class assignments and should be given alternate means of participating in the class.

Instructors should also encourage their students in web-based courses to be self-motivated to complete their assignments in a timely manner. Although web-based courses may appear to be less structured than traditional face-to-face courses, the courses must begin and end during the same time frame and the assignments may need to be completed during this time frame. Unless students in web-based courses have the necessary self-regulation and self-efficacy to do the required work, they can drop-out of the courses.

Some students in web-based courses may not develop the same commitment for their web-based courses as students in traditional courses. Students in web-based courses do not meet the instructor on a regular basis and they do not form the same type of relationships with their fellow classmates as students in traditional courses. Many students in traditional courses persist

because of peer pressure and encouragement. This type of external support is missing in web-based courses. Instructors in web-based courses should try to develop the same type of relationships by being aware of the need to help their students become affiliated with their fellow students.

Recommendations for Further Research

Research on motivated strategies for students in web-based courses needs to be continued as more colleges and universities are moving toward on-line classes to meet the demand for alternative learning opportunities. Some recommendations for further research include:

- Replicate the present study using a larger, more heterogeneous sample from different colleges and universities to determine if the initial findings of this study can be supported.
- Compare academic outcomes of students enrolled in on-line courses and the same course offered in a traditional, face-to-face instructional delivery method to determine if students in on-line courses are learning at the same pace and level as students in traditional courses.
- Investigate teaching methods that instructors in on-line courses could use to increase student motivation.
- Examine student outcomes in traditional courses after completing pre-requisites for the courses that were taken on-line to determine if on-line courses are preparing students adequately to take higher level courses.

Appendix A

Survey

Roberta Foust Online Research Survey

Introduction to the MSLQ Survey Research Project

This survey can be completed in about 15-20 minutes. The survey consists of 10 demographic questions, plus 81 short questions. Please understand that you are not required to complete this questionnaire. However, if you click "Submit" it will be assumed that you are giving me permission to include your anonymous data in my research.

When you answer the following survey questions, apply the answer you select to yourself. There is no right or wrong answers.
Thank you for your help!

DEMOGRAPHICS

1 Gender

- Male
- Female

2 Age

- Less than 20 years
- 21 to 30 years
- 31 to 40 years
- 41 to 50 years
- Over 50 years

3 Class level

- Freshman
- Sophomore
- Other, please specify

4 Ethnicity

- African American

- Asian American
- Caucasian
- Hispanic
- Middle Eastern
- Native American
- Other, please specify

5 Are you employed?

6 If yes, how many hours do you work in a typical week?

- 1-5 hours
- 6-10 hours
- 11-15 hours
- 16-20 hours
- 20+

7 How many credit hours have you completed?

- 1-12
- 13-30
- 31 - 50
- 51+

8 How many of these hours have been completed in a traditional classroom?

- No credit hours
- 1-4 credit hours
- 5-8 credit hours
- 9 + credit hours
- All credit hours

9 How many of these hours have been completed in on-line courses?

- No credit hours
- 1-4 credit hours

- 5-8 credit hours
- 9+ credit hours
- All credit hours

10 Number of credit hours enrolled in for Winter semester?

- 1-3 credit hours
- 4-6 credit hours
- 7-9 credit hours
- 10-12 credit hours
- 13+ credit hours

11 Number of credit hours in on-line courses in the Winter semester?

- 1-3 credit hours
- 4-6 credit hours
- 7-9 credit hours
- 10-12 credit hours
- 13+ credit hours

12 How important were the following statements in your decision to take an online course:

1 Not important at all	2 Somewhat important	3 Very important
Fits into my schedule.		
<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3
I can control the pace of learning.		
<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3
The flexible schedule allows me to take classes that don't fit into the		
<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3
traditional course schedule.		
<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3
It will help me to develop 21st technology skills.		
<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3
I am comfortable learning in an online format.		
<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3
I like being able to interact with my instructor and classmates on a 24/7		
<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3
basis.		

75

 1 2 3

I believe this on-line course will enhance my skills in the future (lifelong learning).

 1 2 3 1 2 3

I think this would be easier than a traditional class.

 1 2 3

It was the only format available for taking this class

 1 2 3

13 What final grade do you expect to earn in your on-line class?

1	2	3	4	5	6	7	8
0.00	1.00	1.50	2.00	2.50	3.00	3.50	4.00

COMG-153

 1 2 3 4 5 6 7 8

QUAL-105

 1 2 3 4 5 6 7 8

MGMT-283

 1 2 3 4 5 6 7 8

COMS-170

 1 2 3 4 5 6 7 8

QUAL-201

 1 2 3 4 5 6 7 8

COMG-165

 1 2 3 4 5 6 7 8

MSQL QUESTIONNAIRE

14 In a class like this, I prefer course material that really challenges me so I can learn new things.

Not at all true of me

Very true of me

 1 2 3 4 5 6 7

15 If I study in appropriate ways, than I will be able to learn the material in this course.

Not at all true of me

Very true of me

1 2 3 4 5 6 7

- 16 When I take a test I think about how poorly I am doing compared with other students.

Not at all true of me

Very true of me

1 2 3 4 5 6 7

- 17 I think I will be able to use what I learn in this course in other courses.

Not at all true of
meVery true
of me

1 2 3 4 5 6 7

- 18 I believe I will receive an excellent grade in this class.

Not at all true of me

Very true of me

1 2 3 4 5 6 7

- 19 I am certain I can understand the most difficult material presented in the readings for this course.

Not at all true of me

Very true of me

1 2 3 4 5 6 7

- 20 Getting a good grade in this class is the most satisfying thing for me right now.

Not at all true of
meVery true of
me

1 2 3 4 5 6 7

- 21 When I take a test I think about items on other parts of the test I can't answer.

Not at all true of me

Very true of me

1 2 3 4 5 6 7

22 It is my own fault if I don't learn the material in this course.

Not at all true of me Very true of me

1 2 3 4 5 6 7

23 It is important for me to learn the course material in this class.

Not at all true of me Very true of me

1 2 3 4 5 6 7

24 The most important thing for me right now is improving my overall grade point average, so my main concern in this class is getting a good grade.

Not at all true of me Very true of me

1 2 3 4 5 6 7

25 I'm confident I can learn the basic concepts taught in this course.

Not at all true of me Very true of me

1 2 3 4 5 6 7

26 If I can, I want to get better grades in this class than most of the other students.

Not at all true of me Very true of me

1 2 3 4 5 6 7

27 When I take tests I think of the consequences of failing.

Not at all true of me Very true of me

1 2 3 4 5 6 7

28 I'm confident I can understand the most complex material presented by the instructor in this course.

Not at all true of me							Very true of me	
1	2	3	4	5	6	7		

29 In a class like this, I prefer course material that arouses my curiosity, even if it difficult to learn.

Not at all true of me							Very true of me	
1	2	3	4	5	6	7		



Roberta Foust Online Research Survey

30 I am very interested in the content area of this course.

Not at all true of me						Very true of me
1	2	3	4	5	6	7

31 If I try hard enough, then I will understand the course material.

Not at all true of me						Very true of me
1	2	3	4	5	6	7

32 I have an uneasy, upset feeling when I take an exam.

Not at all true of me						Very true of me
1	2	3	4	5	6	7

33 I'm confident I can do an excellent job on the assignments and tests in this course.

Not at all true of me						Very true of me
1	2	3	4	5	6	7

34 I'm confident I can do an excellent job on the assignments and tests in this course.

Not at all true of me						Very true of me
1	2	3	4	5	6	7

35 I expect to do well in this class.

Not at all true of me						Very true of me
1	2	3	4	5	6	7

- 36 The most satisfying thing for me in this course is trying to understand the content as thoroughly as possible.

Not at all true of me						Very true of me
1	2	3	4	5	6	7

- 37 I think the course material in this class is useful for me to learn.

Not at all true of me						Very true of me
1	2	3	4	5	6	7

- 38 When I have the opportunity in this class, I choose course assignments that I can learn from, even if they don't guarantee a good grade.

Not at all true of me						Very true of me
1	2	3	4	5	6	7

- 39 If I don't understand the course material, it is because I didn't try hard enough

Not at all true of me						Very true of me
1	2	3	4	5	6	7

- 40 I like the subject matter of this course.

Not at all true of me						Very true of me
1	2	3	4	5	6	7

- 41 Understanding the subject matter of this course is very important to me.

Not at all true of me						Very true of me
1	2	3	4	5	6	7

- 42 I feel my heart beating fast when I take an exam.

Not at all true of me						Very true

Not at all true of me of me

1 2 3 4 5 6 7

43 I want to do well in this class because it is important to show my ability to my family, friend's employer of others.

Not at all true of me Very true of me

1 2 3 4 5 6 7

44 I'm certain I can master the skills being taught in this class.

Not at all true of me Very true of me

1 2 3 4 5 6 7



Roberta Foust Online Research Survey

- 45 Considering the difficulty of this course, the teacher, and my skills, I think I will do well in this class.

Not at all true of me							Very true of me
1	2	3	4	5	6	7	

- 46 When I study the readings for this course, I outline the material to help me organize my thoughts.

Not at all true of me							Very true of me
1	2	3	4	5	6	7	

- 47 During class time, I often miss important points because I'm thinking of other things.

Not at all true of me							Very true of me
1	2	3	4	5	6	7	

- 48 When studying for this course, I often try to explain the material to a classmate or friend.

Not at all true of me							Very true of me
1	2	3	4	5	6	7	

- 49 I usually study in a place where I can concentrate on my coursework.

Not at all true of me							Very true of me
1	2	3	4	5	6	7	

- 50 When reading for this course, I make up question to help focus my reading.

Not at all true of me							Very true of me
1	2	3	4	5	6	7	

- 51 I often feel so lazy or bored when I study for this class that I quit before I finish what I planned to do.

Not at all true of me							Very true of me
1	2	3	4	5	6	7	

- 52 I often find myself questioning things I hear or read in this course to decide if I find them convincing.

Not at all true of me							Very true of me
1	2	3	4	5	6	7	

- 53 When I study for this class, I practice saying the material to myself over and over.

Not at all true of me							Very true of me
1	2	3	4	5	6	7	

- 54 Even if I have trouble learning the material in this class, I try to do the work on my own, without help from anyone.

Not at all true of me							Very true of me
1	2	3	4	5	6	7	

- 55 When I become confused about something I'm reading for this class, I go back and try to figure it out.

Not at all true of me							Very true of me
1	2	3	4	5	6	7	

- 56 When I study for this course, I go through the readings and my class notes and try to find the most important ideas.

Not at all true of me							Very true of me
1	2	3	4	5	6	7	

57 I make good use of my study time for this course.

Not at all true of me						Very true of me
1	2	3	4	5	6	7

58 If course readings are difficult to understand, I change the way I read the material.

Not at all true of me						Very true of me
1	2	3	4	5	6	7

59 I try to work with other students from this class to complete the course assignments.

Not at all true of me						Very true of me
1	2	3	4	5	6	7

60 When studying for this course, I read my class notes and course reading over and over again.

Not at all true of me						Very true of me
1	2	3	4	5	6	7

61 When a theory, interpretation or conclusion is presented in class or in the readings, I try to decide if there is good supporting evidence.

Not at all true of me						Very true of me
1	2	3	4	5	6	7

62 I work hard to do well in this class even if I don't like what we are doing.

Not at all true of me						Very true of me
1	2	3	4	5	6	7

63 I make simple charts, diagrams, or tables to help me organize course

material.

Not at all true of me							Very true of me
<input type="radio"/>							

- 64 When studying for this course, I often set aside time to discuss course material with a group of students from the class.

Not at all true of me							Very true of me
<input type="radio"/>							

- 65 I treat the course material as a starting point and try to develop my own ideas about it.

Not at all true of me							Very true of me
<input type="radio"/>							

- 66 I find it hard to stick to a study schedule.

Not at all true of me							Very true of me
<input type="radio"/>							

- 67 When I study for this class, I pull together information from different sources, such as lectures, readings and discussions.

Not at all true of me							Very true of me
<input type="radio"/>							

- 68 Before I study new course material thoroughly, I often skim it to see how it is organized.

Not at all true of me							Very true of me
<input type="radio"/>							

- 69 I ask myself questions to make sure I understand the materials I have been studying in this class.

Not at all true of me Very true of me

1 2 3 4 5 6 7

70 I try to change the way I study in order to fit the course requirements and the instructor's teaching style.

Not at all true of me Very true of me

1 2 3 4 5 6 7

71 I often find that I have been reading for this class but don't know what it was all about.

Not at all true of me Very true of me

1 2 3 4 5 6 7

72 I ask the instructor to clarify concepts I don't understand well.

Not at all true of me Very true of me

1 2 3 4 5 6 7

73 I memorize key words to remind me of important concepts in this class.

Not at all true of me Very true of me

1 2 3 4 5 6 7

74 When course work is difficult, I either give up or only study the easy parts.

Not at all true of me Very true of me

1 2 3 4 5 6 7



Roberta Foust Online Research Survey

- 75 I try to think through a topic to decide what I am supposed to learn from it rather than just reading it over when studying for this course.

Not at all true of me						Very true of me
1	2	3	4	5	6	7

- 76 I try to relate ideas in this subject to those in other courses whenever possible.

Not at all true of me						Very true of me
1	2	3	4	5	6	7

- 77 When I study for this course, I go over my class notes and make an outline of important concepts.

Not at all true of me						Very true of me
1	2	3	4	5	6	7

- 78 When reading for this class, I try to relate the material to what I already know.

Not at all true of me						Very true of me
1	2	3	4	5	6	7

- 79 I have a regular place set aside for studying.

Not at all true of me						Very true of me
1	2	3	4	5	6	7

- 80 I try to play around with ideas of my own related to what I am learning in this course.

Not at all true of me						Very true of me
1	2	3	4	5	6	7

- 81 When I study for this course, I write brief summaries of the main ideas from the readings and my class notes.

Not at all true of me							Very true of me
	1	2	3	4	5	6	7

- 82 When I can't understand the material in this course, I ask another student in this class for help.

Not at all true of me							Very true of me
	1	2	3	4	5	6	7

- 83 I try to understand the material in this class by making connections between the readings and the concepts from the lectures.

Not at all true of me							Very true of me
	1	2	3	4	5	6	7

- 84 I make sure that I keep up with the weekly readings and assignments for this course.

Not at all true of me							Very true of me
	1	2	3	4	5	6	7

- 85 Whenever I read or hear an assertion or conclusion in this class, I think about possible alternatives.

Not at all true of me							Very true of me
	1	2	3	4	5	6	7

- 86 I make lists of important items for this course and memorize the lists.

Not at all true of me							Very true of me
	1	2	3	4	5	6	7

87 I attend this class regularly.

Not at all true of me						Very true of me
1	2	3	4	5	6	7

88 Even when course materials are dull and uninteresting, I manage to keep working until I finish.

Not at all true of me						Very true of me
1	2	3	4	5	6	7

89 I try to identify students in this class whom I can ask for help if necessary.

Not at all true of me						Very true of me
1	2	3	4	5	6	7

90 When studying for this course I try to determine which concepts I don't understand well.

Not at all true of me						Very true of me
1	2	3	4	5	6	7

91 I often find that I don't spend very much time on this course because of other activities.

Not at all true of me						Very true of me
1	2	3	4	5	6	7

92 When I study for this class, I set goals for myself in order to direct my activities in each study period.

Not at all true of me						Very true of me
1	2	3	4	5	6	7

93 If I get confused taking notes in class, I make sure I sort it out afterwards.

Not at all true of me Very true of me

1 2 3 4 5 6 7

94 I rarely find time to review my notes or readings before an exam.

Not at all true of me Very true of me

1 2 3 4 5 6 7

95 I try to apply ideas from course readings in other class activities such as lecture and discussion.

Not at all true of me Very true of me

1 2 3 4 5 6 7



Appendix B

Research Information Sheet

Research Information

Title of Study: LEARNING STRATEGIES, MOTIVATION, AND SELF-REPORTED ACADEMIC OUTCOMES OF STUDENTS ENROLLED IN WEB-BASED COURSEWORK

Principal Investigator (PI): Roberta A. Foust
Mott Community College – Institutional Research

Purpose:

You are being asked to be in a research study that examines the relationship between student learning styles, attitudes toward web-based coursework, and their outcomes in these types of classes because you are currently enrolled in web-based courses. This study is being conducted at Mott Community College.

Study Procedures:

If you take part in the study, you will be asked to complete a survey that is on Blackboard. The survey is intended to measure self-efficacy, self-regulation, and motivation for completing web-based courses. Examples of some of the questions to which you will be asked to rate include:

- I believe I will receive an excellent grade in this class.
- I make good use of my study time for this course.
- I have a regular place set aside for studying.

These items will be rated using a 7-point scale that ranges from not at all true to me to very true to me. There are no right or wrong answers to these questions and you will be able to skip any items with which you may be uncomfortable. In addition to the survey, you will be asked to complete a short demographic survey to obtain information about you as a person and student. These questions will include: age, gender, ethnicity, reasons for taking on-line courses, etc. Again, there are no right or wrong answers and you may skip any items. The total time to complete the surveys should be less than 30 minutes.

Benefits

As a participant in this research study, there may be no direct benefit for you; however, information from this study may benefit other people now or in the future.

Risks

There are no known risks at this time to participation in this study.

Costs

There will be no costs to you for participation in this research study.

Title of Study: LEARNING STRATEGIES, MOTIVATION, AND SELF-REPORTED ACADEMIC OUTCOMES OF STUDENTS ENROLLED IN WEB-BASED COURSEWORK

Principal Investigator (PI): Roberta A. Foust
Mott Community College – Institutional Research

Compensation

You will not be paid for taking part in this study.

Confidentiality:

All information collected about you during the course of this study will be kept without any identifiers.

Voluntary Participation /Withdrawal:

Taking part in this study is voluntary. You are free to not answer any questions or withdraw at any time. Your decision will not change any present or future relationships with Wayne State University or its affiliates or Mott Community College.

Questions:

If you have any questions about this study now or in the future, you may contact Robert A. Foust at the following phone number (810) 762-0312. If you have questions or concerns about your rights as a research participant, the Chair of the Human Investigation Committee can be contacted at (313) 577-1628. If you are unable to contact the research staff, or if you want to talk to someone other than the research staff, you may also call (313) 577-1628 to ask questions or voice concerns or complaints.

Participation:

By completing the survey you are agreeing to participate in this study.

Appendix C

Human Investigation Committee Approval

**WAYNE STATE
UNIVERSITY**

HUMAN INVESTIGATION COMMITTEE
101 East Alexandrine Building
Detroit Michigan 48201
Phone: (313) 577-1628
FAX: (313) 993-7122
<https://hic.wayne.edu>

NOTICE OF EXPEDITED APPROVAL

To: Roberta Foust
College of Education

From: Ellen Barton, Ph.D. 
Chairperson, Behavioral Institutional Review Board (B3)

Date: March 20, 2007

RE: HIC #: 05290733E
Protocol Title: Learning Strategies, Motivation, and Self-Reported Academic Outcomes of Students Enrolled in Web-Based Coursework
Sponsor:
Coeus #: 0703004627
Expiration Date: March 19, 2008

Risk Level/Category: No greater than minimal risk.

The above-referenced protocol and items listed below (if applicable) were **APPROVED** following *Expedited Review* (Category 7*) by the Chairperson/designee for the Wayne State University Behavioral Institutional Review Board (B3) for the period of 03/20/2007 through 03/19/2008. This approval does not replace any departmental or other approvals that may be required.

- Recruitment Letter (dated 3/19/07)
- Information Sheet (dated 2/12/07)

-
- Federal regulations require that all research be reviewed at least annually. You may receive a "Continuation/Renewal Reminder" approximately two months prior to the expiration date; however, it is the Principal Investigator's responsibility to obtain review and continued approval **before** the expiration date. Data collected during a period of lapsed approval is unapproved research and can **never** be reported or published as research data.
 - All changes or amendments to the above-referenced protocol require review and approval by the HIC **BEFORE** implementation.
 - Adverse Reactions/Unexpected Events (AR/UE) must be submitted on the appropriate form within the timeframe specified in the HIC Policy (<https://www.hic.wayne.edu/hicool.html>).

NOTE:

1. Upon notification of an impending regulatory site visit, hold notification and/or external audit the HIC office must be contacted immediately.
2. Forms should be downloaded from the HIC website at each use.

*Based on the Expedited Review List, revised November 1998

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Associates.

Abstract

LEARNING STRATEGIES, MOTIVATION, AND SELF-REPORTED ACADEMIC
OUTCOMES OF STUDENTS ENROLLED IN WEB-BASED COURSEWORK

by

ROBERTA A. FOUST

May 2008

Advisor: Dr. Shlomo Sawilowsky

Major: Curriculum and Instruction

Degree: Doctor of Education

The arrival of the Internet and the web browser has led to a worldwide explosion of web-based virtual classes as a form of instructional delivery systems among institutions of higher education (Moore & Kearsley, 2005). Colleges and universities are beginning to offer classes and in some instances complete programs using the Internet. However, research on student motivation and outcomes is mixed. The purpose of this study was to examine the relationship between student self-regulation, self-efficacy, motivation toward web-based coursework, self-reported course outcomes, and reasons for enrolling in web-based courses on student retention in web-based courses.

A web-based survey was developed by the researcher along with The *Motivation Strategies for Learning Questionnaire* (MSLQ), developed by Pintrich, Smith, Garcia, and McKeachie (1991). A total of 21 community college students from a possible sample of 189 submitted their completed surveys for a response rate of 11.6%.

The findings of the study indicated that student motivation was not statistically significantly correlated with self-reported grade point average. Reasons for taking on-line courses were not related to self-reported grade point average. Students who had completed fewer credit hours thought that on-line courses could enhance their skills for the future and would be

easier than traditional classes. A positive correlation was found between the number of credit hours a student was taking in the present semester was associated with students who indicated that the on-line course format was the only one available.

The study was limited to one community college located in a county with a depressed economy. The small number of students who participated in the study may have limited the generalizability to all students enrolled in online courses at this college in particular and to students in online classes in other community colleges. Using this exploratory study, further research is needed with a larger, more heterogeneous sample of community college students enrolled in online courses.

Autobiographical Statement

Roberta A. Foust

Education	<p>2008 – Doctor of Education Wayne State University, Detroit, MI Major: Curriculum and Instruction</p> <p>1997 – Master of Science Ferris State University, Big Rapids, MI Major: Computer Information Management</p> <p>1993 – Master of Arts Eastern Michigan University, Ypsilanti, MI Major: Counseling</p> <p>1988 – Master of Arts Eastern Michigan University, Ypsilanti, MI Major: Educational Administration – Curriculum Coordinator</p> <p>1981 – Bachelor of Science University of Michigan – Flint, Flint, MI Major: Postsecondary Vocational Education – Computer Technology</p> <p>1967 – Associates of Science Mott Community College, Flint, MI Computer - Accounting</p>
Professional Employment	<p>1980 to Present Mott Community College, Flint, MI Research Analyst – Institutional Research Office Adjunct Faculty – Computer Technology Classes</p>
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