LEARNING TACTICS OF SUCCESSFUL
ONLINE LEARNERS

by

Marilyn Ann Besich

A dissertation submitted in partial fulfillment
of the requirements for the degree
of
Doctor of Education
in
Education

MONTANA STATE UNIVERSITY
Bozeman, Montana

April 2005
APPROVAL

of a dissertation submitted by

Marilyn Ann Besich

This dissertation has been read by each member of the dissertation committee and has been found to be satisfactory regarding content, English usage, format, citations, bibliographic style, and consistency, and is ready for submission to the College of Graduate Studies.

Dr. Richard Howard
April 18, 2005

Approval for the Department of Education

Dr. Robert Carson
April 18, 2005

Approval for the College of Graduate Studies

Dr. Bruce McLeod
April 18, 2005
STATEMENT OF PERMISSION TO USE

In presenting this dissertation in partial fulfillment of the requirements for a doctoral degree at Montana State University, I agree that the Library shall make it available to borrowers under rules of the Library. I further agree that copying of this dissertation is allowable only for scholarly purposes, consistent with “fair use” as prescribed in the U.S. Copyright Law. Requests for extensive copying or reproduction of this dissertation should be referred to Bell & Howell Information and Learning, 300 North Zeeb Road, Ann Arbor, Michigan 48106, to who I have granted “the exclusive right to reproduce and distribute my dissertation in and from microform along with the non-exclusive right to reproduce and distribute my abstract in any format in whole or in part.”

Marilyn Ann Besich

April 18, 2005
### TABLE OF CONTENTS

1. **INTRODUCTION** ........................................................................................................... 1
   - Statement of the Problem ......................................................................................... 6
   - Purpose of the Study ............................................................................................... 9
   - Theoretical Framework ......................................................................................... 10
   - Research Questions ............................................................................................... 12
   - Significance of the Study ...................................................................................... 12
   - Definitions of Terms ............................................................................................. 13
   - Limitations and Delimitations ............................................................................... 14
   - Researcher ............................................................................................................. 16
   - Summary ............................................................................................................... 16

2. **REVIEW OF THE LITERATURE** ........................................................................ 17
   - Introduction .......................................................................................................... 17
   - Distance Education and Online Learning ........................................................... 18
   - Adult Learning Theories ....................................................................................... 20
   - Locus of Control .................................................................................................... 25
     - Locus of Control and Self-Efficacy .................................................................. 27
     - Locus of Control and Self-Directed Learning .................................................. 27
     - Locus of Control and Field-Independence ....................................................... 28
     - Locus of Control and Learner Autonomy ......................................................... 29
   - Learning Strategies ............................................................................................... 29
   - Learning Tactics .................................................................................................... 31
   - Summary ............................................................................................................... 33

3. **METHODOLOGY** .................................................................................................... 35
   - Introduction .......................................................................................................... 35
   - Research Design .................................................................................................... 36
   - Participant Selection ............................................................................................. 37
   - Instrumentation ..................................................................................................... 38
   - Data Collection Procedures ............................................................................... 39
   - Analysis .................................................................................................................. 41
   - Limitations and Delimitations .............................................................................. 42
   - Summary ............................................................................................................... 44
4. RESULTS AND FINDINGS ................................................................. 45
   Introduction .................................................................................. 45
   Phase One—Quantitative Analysis .............................................. 46
     Test the WebCT sample to the WebCT population .................. 48
     Grades and Locus of Control (RLOC) ...................................... 53
   Summary of Phase One ................................................................. 57
   Phase Two—Qualitative Analysis .............................................. 58
     Profile of Participants ............................................................... 59
     Interview Settings and Location .............................................. 62
     The Interviews ......................................................................... 63
   Summary of Phase Two ................................................................. 75
   Summary ....................................................................................... 77

5. CONCLUSIONS AND RECOMMENDATIONS ............................... 78
   Introduction .................................................................................. 78
   Phase One—Quantitative Findings and Conclusions .................. 79
   Phase Two—Qualitative Findings and Conclusions .................. 80
     Time Demands ........................................................................... 80
     Commitment ................................................................. 81
     Social Interaction .......................................................... 82
   Summary ....................................................................................... 84
   Implications for Further Research ............................................. 86

REFERENCES .................................................................................. 88

APPENDICES ................................................................................. 96
   Appendix A—Rotter’s Locus of Control Inventory and Survey .......... 97
   Appendix B—Invitation to Participate Letter, E-Mails, and Postcard ...... 104
   Appendix C—Interview Protocol ................................................. 113
   Appendix D—Letter of Permission and Peer Audit Letter .............. 115
LIST OF TABLES

<table>
<thead>
<tr>
<th>Table</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Two-way contingency table on gender and age for the WebCT population (N = 595)</td>
<td>47</td>
</tr>
<tr>
<td>2. Two-way contingency table on gender and age for the WebCT sample (n = 122)</td>
<td>48</td>
</tr>
<tr>
<td>3. Two-way contingency table on gender and collapsed age for the WebCT sample (n = 122)</td>
<td>50</td>
</tr>
<tr>
<td>4. Comparison of age and gender variables with the WebCT population and sample and Student Body population</td>
<td>51</td>
</tr>
<tr>
<td>5. Cross tabulation of WebCT sample Grades and Locus of Control Scores (n = 122)</td>
<td>52</td>
</tr>
<tr>
<td>6. Pearsons Product Moment Correlation Coefficient for WebCT sample grades and RLOC scores</td>
<td>53</td>
</tr>
<tr>
<td>7. Distribution of Percentages of Grades in the WebCT Samples and WebCT Population</td>
<td>54</td>
</tr>
<tr>
<td>8. Wilcoxon Signed Ranks Test for WebCT sample grades and WebCT population grades</td>
<td>55</td>
</tr>
</tbody>
</table>
# LIST OF FIGURES

<table>
<thead>
<tr>
<th>Figure</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>WebCT homepage of the “Learning Tactics Study”</td>
<td>45</td>
</tr>
<tr>
<td>2</td>
<td>Demographics of Phase Two Participants</td>
<td>58</td>
</tr>
</tbody>
</table>
ABSTRACT

The relationship between locus of control and academic performance has been documented in numerous studies. However, there are very few studies that have been designed to investigate that relationship with online learners. Individuals with a strong internal locus of control are said to use resources in unique ways, are persistent, and generally reach the goals that they set for themselves. However, it is not known what specific tactics these individuals utilize in order to succeed. The purpose of this study was two-fold. The first was to explore the relationship between internal locus of control as measured by Rotter’s Locus of Control Inventory and academic performance measured by course grade among online learners, the second was to investigate the unique learning tactics of successful online learners.

Students enrolled in fall semester 2004 online courses at Montana State University Great Falls College of Technology were asked to participate in an online study of their learning tactics. Though there was no statistically significant difference between the sample (n = 122) and the population (N = 595) with regard to age, gender, and grade distribution in this study, a preponderance of high grades and strong internal locus of control scores within the sample resulted in a non-statistically significant relationship between locus of control and academic performance. The sample was predominately successful in online courses and reflected an internal locus of control.

Ten of the students in the sample were interviewed to explore the learning tactics that they used to navigate within the online learning environment. Three themes or learning tactics emerged from the one-on-one interviews. The first tactic focused on the amount of time required in online courses, the second focused on the necessary commitment of the student to attend to the online course, and the third tactic related to the resistance of the students to engage in group work and projects within their online courses. It is recommended that these tactics be further investigated as related to student success in online delivered courses.
CHAPTER 1

INTRODUCTION

The number of distance education course offerings continues to grow in U.S. postsecondary education institutions. In the 12-month 1997-1998 academic year an estimated 54,470 different distance education courses were offered by 2-year and 4-year institutions. An estimated 127,400 different distance education courses for any level or audience were offered by 2- and 4-year institutions during the 12-month 2000-2001 academic year. The majority (90 percent) of the institutions reporting in 2000-2001 offered Internet courses using asynchronous computer-based instruction as a primary mode of instructional delivery (National Center For Education Statistics U.S. Department of Education, 1999; National Center For Education Statistics. U.S. Department of Education, 2003).

The Montana University System (MUS) offered a distance degree program in Industrial Hygiene as early as 1983 from Montana Tech of the University of Montana. Other MUS campuses began offering degree programs via distance education using a variety of delivery methodologies by 1994. In 1997, two MUS campuses began offering asynchronous computer-based online degree programs. Montana State University—Billings and Montana State University Great Falls College of Technology (MSUCOT),
the site of this study, lead the way in offering online degree programs and courses (OCHE-Report, 2004).

The Montana University System has had dramatic growth in two-year degrees awarded. From academic years 1992­1993 to 2000-2001, the number of associate degrees awarded increased 73 percent (OCHE-Report, 2002). This increase is less consistent with community-college enrollments nationally which rose steadily from the mid-1970s to the mid-1990s and leveled off in 1995 to 1999. However, the reasons for the increases in enrollment in MUS two-year campuses are consistent with increased community college enrollment nationally. Skyrocketing tuition rates at four-year colleges have pushed more students to community colleges. In addition, community colleges are offering both flexibility in scheduling classes during evenings and weekends and quick retraining programs that are generally more adept at dealing with students who have been out of school for long periods of time. These factors are attracting more traditional and nontraditional students to community or two-year campuses (Evelyn, 2001). For MSUCOT, a two-year degree granting institution, the increase in the number of two-year degrees awarded is proportional to the increase in enrollment. According to registration records, student enrollment at MSUCOT increased by 81 percent from 1994 to 2004 (Enrollment Records 1997-2004; Moe 2004).

This increase in enrollment at MSUCOT has been largely attributed to the increase in the number of online learners. In fall semester 1997, the first and only online course had 5 students enrolled. Fall semester 2003, over 602 students enrolled in 58 online courses; during spring semester 2004, 598 students enrolled in 64 online courses; and during fall 2004, 619 students enrolled in 82 online courses. This enrollment data
represents an unduplicated head count; students enrolled in multiple online courses during one semester were counted only once (Enrollment Records, 1997-2004). The College has directed limited resources toward keeping up with student demand for online offerings and faculty demands for training and scheduling resulting from the shift to the online methodology.

Attrition of distance education learners was found to be higher than that of on-campus learners and is much higher at the beginning of the course than towards the end of the course (Kember, 1995). Attrition rates for the online courses at MSUCOT are lower than those reported for other campuses offering online courses but are higher than attrition rates for on-campus courses at the College. Of the 726 enrollments in online courses at MSUCOT during academic year 2001-2002, 581 students completed; a retention rate of 80 percent for online students. The completion rate for students enrolled in face-to-face courses on campus during that same period was 81 percent (Moe, 2002). MSUCOT administrators and faculty are interested in reducing attrition rates for all courses and are particularly concerned about the factors that contribute to higher attrition in online courses. They are also concerned about online learning students accessing the student services of the campus. Some of those services, for example tutoring labs, focus on assisting the students to be successful in their courses; however, these services are primarily face-to-face on the campus and not available through an online vehicle. MSUCOT administrators and faculty believe that the lack of access to appropriate academic assistance contributes to the higher attrition rates of the online students. However, successful online students remain motivated to continue taking courses.
MSUCOT has developed orientations and online tutorials to assist the students to prepare for and function in the online courses. These tools have developed from previous models used for face-to-face students and may not meet the unique needs of the online learner. In 1997, when MSUCOT first began to offer online courses, none of the faculty or administrators had experience taking or teaching courses online. By fall semester 2000, fifty percent of the MSUCOT tenure-track faculties were teaching online courses (Personal Communication, M. Moe, September 12, 2002). Educators coming from a face-to-face learning experience may not accurately understand the unique needs of online students. Instructors and administrators have planned for current online learning student orientations based on their perceptions of the distance students’ needs, primarily focusing on how to use the technology, specifically the software, used to deliver the course content. Faculty development offerings designed to assist faculty to navigate within the online methodology have also emphasized the use of the technology and the course management system (WebCT) to deliver the course content and to effectively communicate with the students. Although, faculty development programs often emphasize teaching strategies and tools and assume that good teaching alone will produce good learning (Miller, 2000), educators need a better understanding of the online learning experience from current online learners.

Until recently, the primary focus in the field of online learning was to orient faculty and student to the use of the technology. According to Palloff and Pratt (2003), online educators are no longer in the first wave of online course development, and the emerging focus in the second wave of online course development is on the student. Online learning in its best form is learner-centered and learner-focused. Research is
needed to examine the effects of learner choices on learning from computer-based training and to identify constructs that predict these choices. Because developing computer-based training is time-consuming and expensive, organizations should focus their efforts toward learners who make effective choices. Understanding which choices lead to learning and predicting who will make these choices are important areas of theory development and training practice (Palloff & Pratt, 2003; Hall, 1997, Brown, Summer 2001).

Wilson (2002) argued that distance education is moving toward an activity theory framework for analyzing situations with a focus on participants and their intentions, tools, and culture. Hase and Kenyon (2000) argued that the rapid rate of change in society and the so-called information explosion suggest that educators should be looking at an educational approach where it is the learner who determines what and how learning should take place. The concept of truly self-determined learning is called heutagogy, and it is suggested that heutagogy is appropriate to meet the needs of learners in the twenty-first century, particularly in the development of individual capability (Hase & Kenyon, 2000).

Just as Hase and Kenyon (2000) made a distinction between heutagogy and andragogy, Knowles (1970) was credited with a landmark in teaching and learning practices when he made the distinction between andragogy and pedagogy—how adults learn and how children learn. Because learning defies easy definition and no single theory explains all of learning, adult learning relies on a number of key theories. One of those theories is social learning theory which posits that people learn from observing others.
Social learning theory has served as the foundation for a number of constructs that explain various aspects of human learning. Locus of control and self-efficacy are two of the most noted constructs that have emerged from social learning theory (Merriam & Caffarella, 1999; Rotter, 1982). The relationship between locus of control and academic performance has been the subject of numerous studies (Corbeil, 2003; D. E. Howard, 1996; Lefcourt, 1982; L. J. E. Wilson, 1992). A review of existing literature has indicated that the relationship between locus of control and academic performance of online learners has only been touched on by a few researchers, and only the study by Miller and Filcher (2000) was found to address the theoretical framework on the learning activities or learning tactics of online learners.

**Statement of the Problem**

Online instructors need to provide their online learners with the learning tactics that will help them succeed. Online instructors may not know the specific activities, actions or learning tactics that successful online students engage in as they advance through online courses. Research focused on discovering the predictors of success of students in online courses is critical since for most campuses the attrition rates of distance learners far exceed those of on-campus learners (Lowe, 1997).

The learner-centered and learner-focused second wave of online instruction will turn to the learners themselves to discover the learning tactics that students employ to meet the challenges of the online learning environment (Palloff & Pratt, 2003). In this second wave, the learners are the experts in coping with the environment, and much can be learned from them. Using social learning theory, educators need to observe and learn
from the students who have discovered the activities, strategies, or tactics necessary to succeed in the online environment.

Online learners and instructors are visually separated in the virtual classroom. In the traditional classroom, the instructor can more easily facilitate and observe the learning activities. In the traditional classroom, the instructor can quickly modify and customize learning activities by observing the students engaged in the activities. The virtual classroom does not provide the instructor with the immediate feedback about the activities to make timely modifications (Collison, Elbaum, Haavind, & Tinker, 2000).

Online students need to be self-directed and use resources beyond the materials made available to them by their instructors in order to flourish in the isolation of distance education. The successful students are discovering the tactics necessary for them to succeed in the online environment. In the second wave of online course development, educators need to provide online learners with learning activities and tactics. These tactics can be identified by studying the online environment from the successful learners’ perspective. These learners are uniquely positioned within the online environment. The educator, the architect of the environment, does not possess the same view.

It is not enough to tell students who enroll in online courses, that online courses require them to take greater responsibility of their own learning. The College must provide the learners with opportunities to improve learning tactics and resource identification through online orientations or online study skills workshops. Online educators are struggling to discover best practices for a teaching methodology that they may have personally not experienced from the learners’ side of the learning process. Social learning theory posits that people learn from observing others (Merriam &
Caffarella, 1999). Bandura (1976) stated that virtually all learning phenomena resulting from direct experiences can occur on a vicarious basis through observation of other people’s behavior and its consequences for the observer. Educators often use the teaching methodologies that they observed their instructors use when they were learners. These teaching methodologies may not be as successful in the online environment; nor may the learning activities, strategies, or tactics used in a face-to-face learning environment work as well in the online environment. Online educators need to identify activities, strategies, or tactics appropriate for the online environment either from taking online courses themselves or from successful online students who have discovered them. Identifying the tactics used by the successful online learners, sharing those tactics with new online learners in orientations, and suggesting them to online learners currently enrolled in online courses is the critical role of the online instructor in the facilitator role.

Increasing numbers of research studies have focused on the characteristics of the online learner (Ko & Rossen, 2004; R. Palloff & Pratt, 2002; R. M. Palloff & Pratt, 2003). The construct of locus of control, which developed from social learning theory, has been the subject of numerous studies within the educational context, but few studies have focused on the online learner. Research investigations have suggested that people classified as internal in locus of control display more information-seeking behavior and make better use of this information than people classified as external in locus of control (Weiner, 1979). In their review of research investigating the relationship between locus of control and academic achievement, Findley and Cooper and found 275 tests of the link contained in nearly 100 research reports. From their analysis, they drew two basic conclusions: (a) locus of control and academic achievement have a significant positive
relationship, and (b) the magnitude of the relationship is small to medium; however, the relation may hold substantial significance in other explanations of the two variables (Findley & Cooper, 1983). To date, there is very little research on the locus of control of online learners and no research supporting that internal locus of control online learners use information-seeking behavior and make better use of information in online courses (Jegede, Taplin, & Fan, 1999).

**Purpose of the Study**

The purpose of this mixed methods study was two-fold. In Phase One, the relationship between academic performance and locus of control of fall semester 2004 online learners at MSUCOT was explored. The relationship of academic performance and locus of control has been supported in many studies regarding face-to-face methodologies; but, because the online methodology is relatively new, the number of studies of the relationship between these variables in the online environment is more limited. This study added to the knowledge base of online research.

The purpose of Phase Two of the study was to investigate the learning tactics of successful online learners. The literature suggests that successful learners with an internal locus of control have overcome many of the challenges that have kept unsuccessful learners from conquering the journey from the start of a course to its end, and that internal locus of control learners display more information-seeking behavior and make good use of that information. These learners may provide the insight into the challenges of the online journey and the pathways that they found. These learners may utilize unique learning tactics that can be shared with future online learners to improve their educational outcome and online experience. Interviewing the successful internal
locus of control learners may provide insights into unique activities, study patterns, or learning tactics that they utilize.

The first phase, or quantitative portion of the study, utilized a correlational research design to determine the relationship between locus of control as measured by the Rotter’s Internal-External Locus of Control (RLOC) instrument and academic performance among online learners at Montana State University Great Falls College of Technology (MSUCOT).

In the second, qualitative phase of the study, successful, internal locus of control students were interviewed to probe for discrete learning tactics employed by the learners while enrolled in MSUCOT online courses. If learning tactics were identified through interviews, they would be incorporated into orientation and online tutorials to prepare future students for the online environment.

The motivation to engage in adult learning activities might be partly explained by Rotter’s notion of locus of control. Some people, exhibiting an external locus of control, attribute their successes and failures to factors over which they feel they have no control versus those who attribute their successes and failures to personal, internal factors (Merriam & Caffarella, 1999). Providing students with the tools for success will allow them to feel more in control of their learning.

Theoretical Framework

The successful distance learner is characterized by a variety of traits, including a strong sense of independence, an appreciation of owning the direction of their inquiry, and an ability to shape and manage change (Barell, 1995; Cook, 1997). Rotter (1966) wrote that an individual with “a strong belief that he can control his own destiny is likely
to...be more alert to those aspects of the environment which provide useful information” (p. 25). Rotter’s locus of control construct is the theoretical framework of this study with the Internal External Locus of Control Inventory providing an assessment of the degree to which a student’s locus of control could be classified as internal or external (see Appendix A). The lower the score on the inventory the more internal the locus of control is for the student, and a higher score on the inventory indicates a more external locus of control. An individual with a strong internal locus of control perceives events, whether positive or negative, as being a consequence of one’s own actions and thereby potentially under personal control. An individual with an external locus of control perceives events as being unrelated to one’s own behavior and therefore beyond personal control (Lefcourt, 1982).

Past research has demonstrated that students who are intrinsically motivated, are more persistent, more deeply involved, and show more adaptive cognitive and achievement outcomes than those that are extrinsically motivated (Wolters, 1998). Dille and Mezack (1991) also found that internally oriented students could be expected to persevere more because they perceive events as contingent upon their own behavior and would expect their efforts to affect their success. Altmann and Arambasich (1982) found a significant relationship between attrition and locus of control, with external adult students demonstrating a higher dropout rate than internal adult students. Sixty-two percent of the students who dropped out were external and 38 percent internal. The locus of control construct in research will expand the understanding and knowledge of online learners.
Research Questions

The literature supports that students with an internal locus of control have lower attrition and higher performance assessments. It is not known if these students develop and use unique learning tactics to complete their coursework. Few locus of control studies have been conducted on online students, and still fewer studies have focused on the construct of learning tactics of online students. The questions addressed in this study were:

(1) What is the relationship between internal locus of control as measured by Rotter’s Locus of Control instrument and academic success as measured by academic performance of fall semester 2004 MSUCOT online learners?

(2) Do successful online learners utilize unique learning tactics?

Significance of the Study

The second wave of online course development is a learner-focused, self-directed approach based on a belief that we cannot teach but can only facilitate the acquisition of knowledge (R. M. Palloff & Pratt, 2003). Key characteristics of successful online instructors have been identified:

1. Flexibility
2. Willingness to learn from one’s students and others
3. A willingness to give up control to the learners in both course design and the learning process
4. A willingness to collaborate
5. A willingness to move away from the traditional faculty role (R. Palloff & Pratt, 2002).

This study will contribute to the growing knowledge about the learning tactics of successful online learners and will be learner-centered and learner-focused knowledge collected from the student. If the learning tactics of successful online learners can be identified, those learners can benefit from the positive vantage point by having the learning tools prior to taking the online course instead of discovering the learning tools during the course. Understanding the nature of the learning tactics utilized in online courses will allow educators to design courses and programs that produce higher student learning outcomes.

**Definitions of Terms**

*Field-dependence and Field-independence.* These terms refer to distinct cognitive learning styles. According to Witkin and his associates, the FI/FD dimensions are defined as “the extent to which a person perceives part of a field as discrete from the surrounding field as a whole, rather than embedded in the field; the extent to which a person perceives analytically” (Witkin, Moore, Goodenough, & Cox, 1997).

*Hybrid online courses.* For purposes of this study hybrid online courses are those courses taught at MSUCOT which combine face-to-face learning and interactive, asynchronous learning mediated by the Internet. Hybrid courses included in this study delivered 50 percent or more of the content online as indicated by the faculty teaching those courses.

*Learner Autonomy.* Bouchard (2003) defines the term in relation to the control that the learner exercises over the various aspects of learning, beginning with the decision
to learn or not to learn. Bouchard outlined the cognitive, algorithmic, semantic and economic dimensions of learner autonomy. The algorithmic dimension stipulates the choices the learner makes including defining learning goals, deciding on a learning sequence, choosing a workable pacing of the learning activities, and selecting learning resources (Hrimech & Bouchard, 1998).

**Learning Tactics.** The term “learning tactics” is rarely used in the educational context. A search of keywords in ERIC produced only 12 records referencing the term. The Learning Tactics Inventory developed by Maxine Dalton is one of those records. Dalton stated that the Learning Tactics inventory depicts learning from the outside in as a set of behavioral tactics that an individual employs to engage in and learn from a challenging opportunity (Dalton, 1998).

**Locus of Control.** Grounded in social learning theories, the term “locus of control” is a theoretical construct that refers to people’s belief about their control over life events. The theory describes the degree to which an individual believes that reinforcements are contingent upon his or her own behavior (Rotter, 1966).

**Online Learning.** The term “online learning” is defined as a formal structured mode of learning that is interactive, asynchronous, and mediated by the Internet. Teaching online means conducting a course partially or entirely through the Internet (Ko & Rossen, 2004).

**Self-Efficacy.** The term “self-efficacy” is defined as an individual’s confidence in his/her ability to perform the behaviors required to produce specific outcomes. This can affect the individual’s willingness to engage in a task, as well as the effort that will be expended, and the persistence that will be exhibited (Kinzie & Delcourt, 1991).
Successful online learners. For this study, this term refers to successful students who have demonstrated mastery of the content at the above average or better level defined by a final grade of “A” or “B” in their online course.

Study Limitations

The following limitations were factors beyond the researcher’s control and may have affected the results of the study.

1. RLOC is a self-reporting instrument that is subject to the problems associated with measuring the affective domain (Kerlinger, 1973).

2. Correlations obtained in a relationship study cannot establish cause-and-effect relationships between the variables that are correlated (Gay, 1996).

Study Delimitations

1. This study included online students in only one semester. It did not study a cohort of students through their educational online experience from entrance to graduation, nor did it make a comparison of students in their first online experience with students who have completed multiple courses using online methodologies.

2. This study was confined to online students attending MSUCOT during the fall 2004 semester. Results of the study may be different for data collected from online learners from different institutions, geographical areas, or studying in another academic semester.

3. Various extraneous independent variables, such as personality, and social and environment factors, and course content that could have an effect on the dependent variable (academic performance) were not considered in the correlation of grades and
RLOC in Phase One of this study. Including all these variables in this study was not feasible. A smaller number of carefully selected variables is much to be preferred to a larger number of carelessly selected variables (Gay, 1996)

Researcher

Marilyn Besich, the researcher for this study, is the program director for the Business Management/Entrepreneurship program for Montana State University Great Falls College of Technology and has served as Chairperson of the Business and Technology Department. She has thirteen years of teaching experience at this institution and six years of teaching experience at a private business college. During four of the thirteen years at MSUCOT, she has taught online courses.

Ms. Besich holds a Bachelor’s Degree in Business and in Education, and a Master’s of Administrative Sciences in Management.

Summary

Research about online course development is moving from a focus on the technology to a focus on the learner. An understanding of how learners overcome the challenges that they face in the isolation of the online environment is essential if educators are to aid the learners to focus on the content of the course and to achieve high academic performance.

This study will contribute to a deeper understanding of the tactics used by successful online learners, while providing educators with the tools to aid future learners to achieve their educational goals using the online methodology.
CHAPTER 2

REVIEW OF THE LITERATURE

Introduction

The purpose of this mixed methods study is two-fold. The first purpose was to explore the relationship between academic performance and locus of control of online learners at MSUCOT. The second purpose of the study was to investigate the learning tactics used by successful online learners. The following research questions were asked:

1. What is the relationship between internal locus of control as measured by Rotter’s Locus of Control instrument and academic success as measured by academic performance of fall semester 2004 MSUCOT online learners?

2. Do successful online learners utilize unique learning tactics?

The purpose of this chapter is to review the existing body of theory and research literature as it pertains to the research questions of the study. To produce a theoretical base for this study, the literature was reviewed for the major constructs of locus of control and the related constructs of self-efficacy, self-directed learning, field-independence, learner autonomy, learning strategies, and learning tactics.

The first section provides an overview of the growth in distance learning educational offerings and the development of the online learning methodology. The
second section reviews adult learning theories. The third section reviews social learning theory and the relationship to locus of control. The following subsections of this chapter review the research that ties the constructs of self-directed learning, field-dependence, learner autonomy, and learning strategies to locus of control. The final section provides an overview of the planning components of strategies and tactics as used in the disciplines of management, marketing and in education.

**Distance Education and Online Learning**

Distance education (National Center For Education Statistics U.S. Department of Education, 1999) has been defined as “any formal approach to learning in which a majority of the instruction occurs while educator and learner are at a distance from one another” (Verduin & Clark, 1991). Distance education is more than a century old, and the history of distance education has been extensively described in the literature (Garrison & Shale, 1990; Holmberg, 1995; Keegan, 1986; M. G. Moore, & Kearsley, G., 1996).

In the 1990s, a new generation of distance education emerged based on computer conferencing networks, computer-based multimedia workstations, audio-graphic conferencing, and two-way video conferencing (M. G. Moore, & Kearsley, G., 1996). Garrison and Shale (1990) reported a striking growth with regard to both the number of students undertaking study at a distance and the number of institutions providing distance education at the university level. Online teaching emerged from this new generation.

Online teaching means conducting a course partially or entirely through the Internet, especially the World Wide Web, as the primary means of communication. It is the newest form of distance education which also includes courses taught through the mail, by video-tape, or via telephone hookups or satellite TV (Ko & Rossen, 2004).
According to the 1997-1998 NCES (National Center for Education Statistics) PEQIS survey (National Center For Education Statistics U.S. Department of Education, 1999), there were an estimated 1,661,100 enrollments in all distance education courses, and 1,363,670 enrollments in college-level, credit-granting distance education courses with most of these at the undergraduate level. From 1994-95 to 1997-98, the number of course offerings and enrollments in distance education approximately doubled (National Center For Education Statistics U.S. Department of Education, 1999). In the 12-month 2000-2001 academic year, there were an estimated 3,077,000 enrollments in all distance education courses offered by 2-year and 4-year institutions. There were an estimated 2,876,000 enrollments in college-level, credit-granting distance education courses, with 82 percent at the undergraduate level. Among institutions offering distance education courses, the majority (90 percent) reported that they offered Internet courses using asynchronous computer-based instruction (National Center For Education Statistics. U.S. Department of Education, 2003).

Enrollment at Montana State University Great Falls College of Technology (MSUGFCOT) increased by 40 percent from 1994 to 2000 and 81 percent from 1994 to 2004 according to the Registrar’s records. This increase in enrollment was been largely attributed to the increase in the number of online learners. In fall semester 1997, the first and only online course had 5 students enrolled. Fall semester 2003, over 601 unduplicated students enrolled in over 40 online courses, and enrollment in fall semester 2004 remained steady at over 603 unduplicated students enrolled in 82 online courses.
Online learning offers conveniences to students and faculty alike. The constraints of having to be someplace to learn or teach have given way to classrooms without boundaries of space and time.

The convenience of learning online applies...well to adult learners, students from educationally underserved areas, those pursuing specialized or advanced degrees, those who want to advance in their degree work through credentialed courses, and any students who simply want to augment the curricular offerings from their local institutions. No longer must they drive to school, find a parking space, sit in a lecture hall at a specific time, wait outside their instructors’ offices for conferences, and take their final exams in a stuffy room. They can hold a job, have a family, take care of parents or pets, and even travel. As long as they can get to a computer connected to the Internet, students can, in most cases, keep up with their work even if they’re busy during the day. School is always in session because school is always there (Ko & Rossen, 2004, p.3).

**Adult Learning Theories**

Just as there is no single theory that explains all of human learning, there is no single theory of adult learning (Merriam & Caffarella, 1999). A number of frameworks or models of adult learning have emerged from the profession. Prior to the 1970s, adult educators relied primarily on psychologists’ understanding of learning in general to inform their practice (Merriam & Caffarella, 1999). In the late 1960’s, Malcolm Knowles proposed a new label (andragogy) of adult learning to distinguish it from preadult schooling (Knowles, 1970). This controversial new label spurred debate and critical analysis among learning theorists as well as a number of other models that also offer insight into adult learning.

Knowles (1970) described andragogy as a set of five assumptions about adult learners that learners and educators alike can use to strengthen the learning transaction. The assumptions regarding an adult’s self-concept, problem-centered focus, readiness to learn, experience, and internal motivation all have some intuitive validity, making
andragogy popular with practitioners in many fields. The first of those five assumptions states, as a person matures, his or her self-concept moves from that of a dependent personality toward one of a self-directing human being (Knowles, 1980). Baumgartner (L. M. Baumgartner, Lee, Birden, & Flowers, 2003) identified a number of criticisms of andragogy as an adult learning theory such as the lack of learning context in the theory premises, and that the theory’s lack of a research definition leads to mixed research. Lee (L. M. Baumgartner et al., 2003) stated Knowles failed to discuss the role of contexts in his construction of andragogy and subsequent studies have suggested that contexts play an important role in adult learning and function to shape the learner’s views of themselves and their engagement in the learning process. That notwithstanding, using andragogy as the foundation, Tough was instrumental in developing the self-directed learning theory in which people take the primary initiative for planning, carrying out, and evaluating their own learning experiences. Self-directed learning has a number of different facets, and there is a rich array of research on the topic addressing the varied aspects of the theory (Merriam & Caffarella, 1999). Candy (1991) and Knowles (1970) linked self-directed learning to informal and incidental learning.

According to Marsick and Watkins (2001) informal and incidental learning adult learning theory is at the heart of adult education because of its learner-centered focus and the lessons that can be learned from life experience. Informal learning is usually intentional but not highly structured, while incidental learning may be taken for granted or unconscious. McFerrin’s (1999) study of incidental learning in a higher education asynchronous online course, revealed that incidental learning occurred on many levels from learning to use the technology itself to becoming more self-disciplined and self-
confident. She also supported the research assertion that students do not differentiate between incidental and intentional learning.

Transformational learning, a third line of adult learning inquiry, was first introduced in 1978 by Mezirow. This theory focuses on dramatic, fundamental change in the way we see ourselves and the world in which we live. Instead of centering on adult learner characteristics as andragogy and self-directed learning theories do, transformational learning centers more on the cognitive process of learning (Merriam & Caffarella, 1999). While most studies on transformational learning have been on individual transformation, Baumgartner (2001) reviewed a number of studies of group and organizational transformations citing that the purpose of transformational organizational learning is for the organization to realize its performance objectives.

In the early 1990s, views on adult learning appeared to shift from a psychological perspective to an environmental one. The focus of adult learning moved from the individual learner to the contexts in which learning takes place and to the structures that shape the context. Critical theory, postmodern and feminist perspectives are representative of this shift. Kilgore (2001) states that critical and postmodern theorists alike believe that knowledge is socially constructed and takes form in the eyes of the knower.

Adult education learning theories draw from five key orientations to learning which include behaviorist, cognitivist, humanist, social learning, and constructivist. The fourth orientation, social learning, combines elements from both behaviorist and cognitivist orientations and posits that people learn from observing others. The foundation of this theory dates back to 1941 when Miller and Dollard conducted a series
of experimental studies of social modeling, which they described as a form of instrumental conditioning in a book entitled *Social Learning and Imitation* (J. E. Miller & Dollard, 1941). Social learning differs from the other four key orientations in its focus on the social setting in which learning occurs. This theory holds that learning occurs through the observation of people in one’s immediate environment and that the learning is a function of the interaction of the person, the environment and the behavior.

Social learning theory is a psychological theory: it begins with unlearned responses but does not attempt to delineate the antecedents of such unlearned responses. Although it is concerned with acquisition of new behaviors or modified unlearned responses, it explains such behavior at a molar level. New responses occur as unlearned or previously learned responses, and are modified or combined into more refined or more complex behavior, a process speeded up by direct reinforcement or expected reinforcement through imitation (Rotter, 1982 p.3).

Social learning theory provides the general theoretical background for the conception of the nature and effects of reinforcement. The effect on a human of a reinforcement following a behavior depends upon whether or not the person perceives a causal relationship between his or her own behavior and the reward.

Key to understanding which behavior an individual will exhibit in a given situation are the concepts of expectancy and reinforcement. Expectancy is the likelihood that a particular reinforcement will occur as the result of specific behavior. The way in which the person construes or defines the situation will affect the values of both reinforcement and expectancy thereby influencing the potential for any given (desired) behavior to occur (Merriam & Caffarella, 1999; E. J. Phares, 1980).

A number of constructs have been carved from social learning theory. In the mid-1980s Bandura developed a social cognitive theory of human functioning which accords a central role to cognitive, vicarious, self-regulatory and self-reflective processes in
human adaptation and change. In this view, people are self-organizing, proactive, self-reflecting and self-regulating, not just reactive organisms shaped and shepherded by environmental forces or driven by concealed inner impulses. Human functioning is the product of a dynamic interplay of personal, behavioral, and environmental influences.

Bandura's decision to re-label his theoretical approach from social learning to social cognitive was due to his growing belief that the breadth of his theorizing and research had expanded beyond the scope of the social learning label (Bandura, 1997). In 1997, Bandura set forth the basic tenants of his theory of self-efficacy in this book, Self-efficacy: The exercise of control. The theory of self-efficacy springs from Bandura's social cognitive theory. Bandura defined perceived self-efficacy as people's perceptions of their capabilities to produce designated levels of performance that exercise influence over events affecting their lives. He posited that self-efficacy beliefs determine how people feel, think, motivate themselves, and behave (Bandura, 1994).

The motivation to engage in adult learning activities may be explained by Rotter's notion of locus of control (Merriam & Caffarella, 1999). The theoretical basis for this theory is also social learning theory.

When a reinforcement is perceived by the subject as following some action of his own but not being entirely contingent upon his action, then in our culture, it is typically perceived as the result of luck, chance, fate, as under the control of powerful others, or as unpredictable because of the great complexity of the forces surrounding him. When the event is interpreted in this way by an individual, we have labeled this a belief in external control. If the person perceives that the event is contingent upon his own behavior or his own relatively permanent characteristics, we have termed this a belief in internal control (Rotter, 1982 p. 171).
Locus of Control

The successful distance learner is characterized by a variety of traits, including a strong sense of independence, an appreciation of owning the direction of their inquiry, an ability to shape and manage change, and an internal locus of control (Barell, 1995; Cook, 1997).

A series of studies provides strong support for the hypotheses that the individual who has a strong belief that he can control his own destiny is likely to (a) be more alert to those aspects of the environment which provide useful information for his future behavior; (b) take steps to improve his environmental conditions; (c) place greater value on skill or achievement reinforcements and be generally more concerned with his ability, particularly his failures; and (d) be resistive to subtle attempts to influence him (Rotter, 1966 p. 25).

Research done by McCombs (1991) suggests that what underlies the internal locus of control is the concept of "self as agent." The self as agent can consciously or unconsciously direct, select, and regulate the use of all knowledge structures and intellectual processes in support of personal goals, intentions, and choices. McCombs (1991) asserts that the degree to which one chooses to be self-determining is a function of one's realization of the source of agency and personal control. When students realize that their thoughts control their actions (their locus of control is internal), they can positively affect their own beliefs, motivations, and academic performance. In other words, students can say to themselves, "I choose to direct my thoughts and energies toward accomplishment. I choose not to be daunted by my anxieties or feelings of inadequacy" (Barell, 1995).

Past research has demonstrated that students who are intrinsically motivated, are more persistent, more deeply involved, and show more adaptive, cognitive and achievement outcomes than those who are extrinsically motivated (Wolters, 1998). A
person with strong internal control beliefs is more likely to view a stressful situation as personally controllable, and this appraisal will result in increased problem-focused coping efforts (Peacock & Wong, 1996).

Altmann and Arambasich (1982) found a significant relationship between attrition and locus of control, with external adult students demonstrating a higher dropout rate than internal adult students. Sixty-two percent of the students who dropped out were external and 38 percent internal.

Stone (1992) linked studies that identified tutor contact and studies that identified locus of control as factors in completion rates for distance learners. Stone concluded that tutor contact in distance education improves the timely completion rates of the learner groups because of the influence of the tutor on externally-motivated learners in the group. Howard (1996) found that female college students who identified a female faculty or staff role model during the first-year of college have a stronger internal locus of control and that the locus of control may be a changeable variable with the identification of the role model. Howard also found that internal locus of control may become more external over the first year of college for female college students who do not identify a role model.

Research has shown that locus of control is positively related to the construct of self-efficacy (Phillips & Gully, 1997), and self-efficacy resembles the construct of locus of control (Haidt & Rodin, 1999). Like students with an internal locus of control, self-efficacious students participate more readily, work harder, persist longer, accept more difficult and challenging tasks, and have fewer emotional reactions when they encounter difficulties (Zimmerman, 2000).
**Locus of Control and Self-Efficacy**

Self-efficacy is a judgment of capability to organize and execute courses of action to attain particular types of performance (Bandura, 1997). Learning self-efficacy has been demonstrated to influence how individuals approach learning (Brown, Summer 2001). Schunk suggests that the benefit of self-efficacy in reference to learning a particular task is that it increases engagement (Schunk, 1989). In a study on self-paced learning, Warr and Bunce found a positive relationship between learning self-efficacy and knowledge score thus supporting the importance of self-efficacy in learner-controlled training. They also found a negative relationship between learning task anxiety and high learning self-efficacy (Warr & Bunce, 1995).

Research studies have focused on the importance of self-confidence and a feeling of being in control. Research suggests that students perform at higher levels if they have confidence in themselves and that personal efficacy is a matter of internal locus of control (Pressley, 1987). Students with more internal locus of control attribute their success to their own abilities and not to luck or chance as do persons with an external locus of control (Thomas, 1980).

**Locus of Control and Self-Directed Learning**

The nexus between locus of control and self-directed learning has been reported in a number of studies (Kerka, 1994, 1996; Long, 1990). Mocker and Spear (1982) included self-directed learning in their descriptive model of lifelong learning which was based entirely on the locus of control for decision making about the objectives and means of learning. The model is a two-by-two matrix of learner and institution with the self-
directed learning situation occurring when learners, not the institution, control both the learning objectives and the means of learning. The cells of the matrix contain: (1) formal learning, in which institutions, not learners, control objectives and the means of learning; (2) non-formal learning, in which learners control the objectives and institutions control the means; and (3) informal learning, in which institutions control the objectives but learners control the means of learning (1982). Students must assume increasing responsibility for planning and regulating their learning. It is difficult for learners to become self-directed when learning is planned and monitored by someone else (Blakey, 1990).

In a study of locus of control and achievement motivation, high achievers were significantly more confident with their studies, tended to be perfectionist, were competitive, were interested in achieving excellence and success, were motivated by the need to avoid failure, and were able to cope with studying in a distance learning mode, all of which are associated with internal attributes (Jegede et al., 1999) and with characteristics consistent with the self-directed learner.

Locus of Control and Field-Independence

A study of the relationship between field-dependence/independence and the frequency of student/proctor interactions and achievement in a personalized system of instruction (PSI) course, suggested that field-independent students had learned to rely on internal referents and were less dependent upon the proctors to provide information and structure. The field-independent persons are significantly more likely to show greater autonomy of others in social situations (Jacobs & Gedeon, 1982).
A number of studies have explored the interaction with field-independent and field-dependent learning and hypermedia-based instruction (HBI). Instruction materials delivered through Internet course management systems such as WebCT can be classified as hypermedia-based instruction materials. The structure of such a system enables users to move from one node to another at will, accessing information from nodes that are delivered in a non-linear sequence while allowing the learner greater control and interactivity. An example would be a WebCT online student watching a streaming video, then taking a quiz, and engaging in a discussion topic, in no specific order. In three different HBI studies, the field-independent students adopted more productive learning strategies than field-dependent students as demonstrated by more active engagement and reading more quickly through the screens while working in HBI (Wang & Jonassen, 1993). The field-independent learners displayed stronger information-seeking behavior than field-dependent learners (Weller, Repman, & Rooze, 1994), and field-dependent learners needed more social interaction and assistance in a hypermedia environment (Summerville, 1999).

**Locus of Control and Learner Autonomy**

Students who appear to be better suited to independent study programs, such as correspondence study, are more likely to indicate a greater need for autonomy in their learning and for control over the pace of learning, as well as a lesser need for the provision of structure and for opportunities for interaction with the instructor and other students (Thompson & Knox, 1987).

According to Baynton (1992), the concept of control has been used extensively in education and other related fields such as sociology, psychology, and communication.
The use of control as a key organizing concept reflects positive consequences for individuals in locus of control studies and when used in a learning situation. Control involves not only variables in the environment such as choice of presentation styles and pace of learning tasks, but also includes the characteristics of the learners themselves such as learning styles and abilities.

**Learning Strategies**

The term *strategy*, taken from the Greek meaning “the art of the general,” was adopted by the business world as a convenient analogue for its planning activities (Takai, 1974). This military meaning of the term has become blurred with the application of strategy to business research (Shiner, 1988) and to learning. Both of these disciplines apply the term with significant difference in meaning (Shiner, 1988).

The distinction between *strategic* and *tactical* is not usually well defined. As a consequence, these terms are frequently used ambiguously if not interchangeably (Ackoff, 1966). Through the years, the meaning of strategic and tactical has become more defined in the business world and less defined in education.

From a business perspective, tactical planning is distinguished from strategic planning in two ways: by the level of detail of the plans and by the ongoing nature of the activity. Strategic planning addresses global, overview types of issues such as identifying which processes should be redesigned and what resources should be allocated. Strategic planning addresses the question of what should be done, and tactical planning addresses the details of how the plans can be implemented (Kubeck, Nov/Dec 1995).

The learning strategy construct has been widely studied and is sometimes used interchangeably with learning styles. Wilson (2002) believes that professional paradigms
in instructional design have been changing in recent years. He believes that our intentional behavior may be methodical and strategic, and becoming at other times ad hoc depending on the constraints of the situation conditions and purposes. Instructional design is not just about the plans and strategies, but more importantly it is about the activities or tactics. “When I think of good instructional design practice, I now tend to think less in terms of strategy deployment and more in terms of activity [tactic]; what are people actually doing (concrete), rather than what strategy (abstraction) are they applying” (B. G. Wilson, 2002).

Learning Tactics

There is very little research on the topic of learning tactics, and only one that could be found that specifically placed the learning tactic as an activity that followed a learning strategy. Using the theoretical framework identified by McKeachie, Pintrich, Smith, Weinstein and Mayer to classify learning strategies and to determine specific learning tactics, Miller and Filcher (2000) reported that in terms of specific cognitive strategies, note-taking was the only tactic found to distinguish between achievement levels.

Metacognitive strategies, including planning, monitoring, and self-regulation, distinguished between achievement levels of students. Resource management strategies such as learning schedules, quality studying, motivation, and communicating with the instructor also distinguished between achievement levels of students. Although several specific tactics have been identified as predictors of student success, an insufficient number of research studies of adult students in distance education environments have been conducted. Thus, research is needed to test experimentally the proposed theoretical
framework and specific learning tactics in a distance education environment (G. Miller & Filcher, 2000).

A New Paradigm for Learning Strategies and Learning Tactics in Education

Online learners are expected to “manage” the task of learning in an independent and self-directed manner. In 1916, Henri Fayol proposed that all managers perform five functions: planning, organizing, commanding, coordinating, and controlling. Most management resources today continue to be organized around a variation of Fayol’s functions of management: planning, organizing, leading, and controlling. Planning is the management function that involves defining goals, establishing strategies for achieving those goals, and developing plans to integrate and coordinate activities (Robbins & Coulter, 2005). The planning function has long borrowed its framework from the military.

The Art of War, written in 6th century B.C. by Sun Tzu, is a strategy manual whose core idea is an understanding that conflict is an inescapable part of human life and whose purpose is to make war unnecessary. While Sun Tzu's teachings have been widely adopted by those seeking a competitive edge in business, the philosopher’s ideas focus on broader implications of the development of strategies and tactical principles and of how they can be applied to everyday circumstances (Sun Tzu & Sun Pin, 1996). The work is often credited with being the foundation for the planning function of management. Online educators and learners can benefit from using the framework of goals, strategies and tactics to guide the learning function.

Research is needed to examine the effects of learner choices on learning from computer-based training and to find constructs that predict these choices. Because
developing computer-based training is time-consuming and expensive (Hall, 1997), organizations should focus their efforts toward learners who make effective choices. Understanding which choices lead to learning and predicting who will make these choices are important areas of theory development and training practice (Brown, Summer 2001).

**Summary**

Julius Rotter’s locus of control construct has been the subject of hundreds of research studies since its inception and is one of the most studied variables in psychology and the other social sciences (Rotter, 1990). Rotter ranks sixty-fourth in *The 100 Most Eminent Psychologists of the 20th Century* list, and eighteenth in *The 25 Psychologists Most Frequently Cited in the Professional Psychological Journal Literature* list with 3,001 journal citations (Haggbloom et al., 2002).

In 1956, Cronbach labeled psychologists as either *splitters*, those who seek to make fine distinctions among psychological concepts by splitting them into constituent elements, or *lumpers*, those who seek to aggregate concepts by combining narrow concepts into broader ones. Not all specific traits are indicators of a broader construct; but, by the same token, new and existing measures must be evaluated on the basis of a possible common core when there is reason (on empirical and/or theoretical grounds) to believe that such a commonality may exist (Judge, Amir, Bono, & Thoresen, 2002).

After a review of the literature on locus of control, its origin and its relationship, including its association to the constructs of self-efficacy, self-directed learning, field-dependence, and learner autonomy, a researcher may conclude that locus of control, as it specifically relates to academic performance and to other types of performance in general
is the core concept among these related constructs. It is for that reason that locus of control will be the single independent variable as measured by Rotter’s Internal-External Locus of Control Scale (RLOC or sometimes abbreviated as I-E Scale) used in this study.

Rotter suggests that “the individual who has a strong belief that he can control his own destiny is likely to (a) be more alert to those aspects of the environment which provide useful information for his future behavior” (Rotter, 1966, p.25). The purpose of this study is to investigate the learning tactics of successful online learners. As Rotter suggests and as the literature supports, learners with an internal locus of control will likely demonstrate unique learning tactics.

The way in which adults are encouraged to learn and aided in that learning is the single most significant ingredient of adult education as a profession (Merriam & Cummingham, 1989). This study will contribute to the knowledge about the learning tactics of successful online learners and will arm educators with the teaching aids for online learners that promote higher academic outcomes. This study may also provide a new perspective on the relationship of learning tactics to learning strategies. Given the proper assortment of tools, online learners can be taught to “manage” their learning efforts by utilizing the planning function of management through the structure of goals, strategies and tactics. This systematic approach to goal attainment has been proven to be successful in the business world and could be the model for all learners to reach educational goals.
CHAPTER 3

METHODOLOGY

Introduction

The purpose of this mixed methods study is two-fold. The first purpose was to explore the relationship between academic performance and locus of control of online learners at MSUCOT. The second purpose of the study was to investigate the learning tactics used by successful online learners.

The literature supports that students with an internal locus of control have lower attrition and higher performance assessments. It is not known if these students develop and use unique learning tactics to complete their coursework. Few locus of control studies have been conducted on online students and still fewer studies have focused on the construct of learning tactics of online students. The questions addressed in this study are:

1. What is the relationship between internal locus of control as measured by Rotter’s Locus of Control instrument and academic success as measured by academic performance of fall semester 2004 MSUCOT online learners?
2. Do successful online learners utilize unique learning tactics?
Research Design

The first phase, or quantitative portion of this study, utilized a correlational research design to determine the degree of the relationship between locus of control as measured by the Rotter’s Internal-External Locus of Control instrument (see Appendix A) and academic performance among online learners at Montana State University Great Falls College of Technology (MSUCOT). A correlational study describes in quantitative terms the degree to which variables are related (Gay, 1996). In this study the independent variable was locus of control, and the dependent variable was student success as measured by academic performance.

In the second qualitative phase, one-on-one interviews were used to probe for discrete learning tactics employed by successful online learners while enrolled in the online courses as suggested by Rotter. A mixed methods study begins with a broad survey in order to generalize results to a population and then focuses on detailed qualitative, open-ended interviews to collect detailed views from participants (Creswell, 2003).

Successful online students with an internal locus of control were asked to participate in open-ended interviews that explored the learning tactics that they utilized to engage in the task of learning in the online courses they were enrolled in at Montana State University Great Falls College of Technology. For purposes of this study, successful online students were defined as those students who received a final grade of “A” or “B” in the online course in which they were enrolled during fall 2004 semester.
Participant Selection

The subjects in the first phase of the correlational study were self-selected from the population of online learners enrolled in one or more online, web-based or WebCT courses offered during the fall 2004 semester at MSUCOT. Students enrolled in the courses taught by the researcher were not included in the population thus mitigating sample bias. The larger the sample, the more closely it approximates the population and therefore the more probable it is that a given coefficient represents a true relationship (Gay, 1996). Therefore, all students (the population) enrolled in an online course of instruction were asked to participate (see Appendix B for Invitation and Participation Instructions Communications). Faculty teaching hybrid courses, on-campus and online, were asked to assess the percentage of the course content delivered online. Only courses with 50 percent or more of the content delivered via WebCT or online were included in the study. It was not expected that the entire WebCT population would participate, but it was expected that inviting all the students to participate would produce an acceptable sample size.

The population size was 600 students enrolled in the fall semester 2004 online courses meeting the criteria mentioned above. This number represented unduplicated students—students taking more than one online course were only counted once. For a population size of 600 subjects, a sample size of 234 is acceptable for statistical analyses (Gay, 1996).

Age and gender variables were collected for the WebCT population. Students participating in the study (WebCT sample) completed Rotter’s Locus of Control inventory and listed the online course(s) that they were enrolled in fall semester 2004.
Marital status, number of children living at home, and employment status were collected from the interviewees in Phase Two.

Chi square “goodness of fit” analyses were conducted on WebCT population and the WebCT sample gender and age variables to test if the students that participated in the study were significantly different from the population of online learners (Pyrczak, 1996).

In the second, qualitative phase, successful online learners, those with a grade of “A” or “B”, were invited to participate in open-ended interviews to explore the learning tactics that they utilized in taking online courses (see Appendix C for Interview Protocol).

Instrumentation

Rotter’s Internal-External Locus of Control Scale (RLOC or sometimes abbreviated as I-E Scale) is a 29-item forced-choice, self-report inventory including six filler items. The score is the number of external choices selected. The higher the score the more external the locus of control. Social learning theory is the framework from which the locus of control construct has emerged and from which Rotter developed the RLOC inventory (Merriam & Caffarella, 1999).

Reliability and validity of the scale have been judged acceptable (Anastasi, 1988). Rotter reported that scores on the RLOC produced a Cronbach’s coefficient alpha of .81 (Rotter, 1966, 1982). Rotter (1966) cited that construct validity has been demonstrated from studies that accurately predicted differences in behavior of those with internal versus external locus of control, further citing the internal consistency of the scale based on a sample of college students to be .65 to .79, with females generally having higher internal consistency values on the scale when compared to males. Reliabilities (split-half and Kuder-Richardson) of RLOC are in the .70 range.
This instrument was chosen on the basis of its widespread use in other research. A compilation of citations from 1966 to 1994 (using the social Sciences Citation Index) revealed that the RLOC was cited (if not actually used) over 600 times (Leone & Burns, 2000).

Data Collection Procedures

The topics below represent the issues that were discussed in a letter inviting the online students to participate in this study. These topics represent the elements of a valid consent to participate disclosure provided to the human participants in this study as required by the Institutional Review Board of Montana State University. In addition to the letter, all the topics below were presented to the students again in the WebCT course shell which was the vehicle for data collection. A copy of the invitation to participate is in Appendix B.

1. The right to participate voluntarily and the right to withdraw at any time.
2. The purpose of the study.
3. The procedures of the study
4. The right to ask questions and obtain a copy of the results
5. A description of how student confidentially will be addressed
6. The benefits of the study.
7. The length of time of participant’s involvement

Students enrolled in online courses key the following address into an Internet browser to access the Montana State University WebCT site login screen: http://webct.montana.edu/webct/public/home.pl. Students were required to enter their name and their campus identification number (Banner ID) to enter the shell. Once in the
class shell, students were asked to reenter their name and unique Banner ID number. They were instructed that doing so indicated that they had given their permission to the researcher to compare their score on the RLOC with the grade that they had received for the online class in which they were enrolled. This study did not require a signed consent to participate form. The actions of the students voluntarily entering their name and unique Banner ID number twice before proceeding to the locus of control inventory constituted consent. Once the student completed the RLOC instrument, the score that the student received was available to both the student and the researcher. Since online classes at MSUCOT utilize the WebCT course management system, students who participated in the study were familiar with the class shell and how to navigate within it.

The students were told that it was possible that they may be asked to participate in a second phase of the study if they participated in the first phase. An abstract of the study will be available to the students in the same class shell until the beginning of summer 2005 semester.

A description of the RLOC instrument as well as a description of the scoring process and an interpretation of the score was provided on a screen at the end of Phase Two of the study. Students in the WebCT sample were given instructions to obtain their score on the RLOC inventory and given a brief description of the meaning of the results. This information was shared with the students after the interview process so that responses to the inventory or to the interview questions would not be influenced by the inventory score or the explanation of the score.

A pilot study of 31 volunteer students was conducted in summer of 2003 to test the delivery methodology of RLOC and the collection of student demographic
information. Student grades were not accessed. A number of changes to the class shell delivery methodology was implemented due to identified flaws in the ease of access and the clarity of instructions. Students in the pilot study stated that the process was too time consuming. Efforts were made to streamline and clarify the instructions as well as use a software feature of the WebCT shell that allowed the score to be immediately accessible to the subjects.

In the qualitative phase of the study, successful online students were asked to participate in an open-ended interview to describe the learning tactics or activities that they utilized in the online course. The design of this portion of this study emerged as the study progressed. It is recognized that the qualitative portion of a study may evolve into an exploration of relationships or comparisons among ideas (Creswell, 2003). A copy of the interview protocol is in Appendix C.

In order to further validate the findings from the interviews, an outside researcher with qualitative experience was asked to audit the validity of the findings in relation to the data collected in Phase Two of this study. As indicated in Appendix D, this audit found the findings to be valid reflecting student comments.

Analysis

The first phase, or quantitative portion of this study, utilized a correlational research design to determine the relationship between locus of control (independent variable) as measured by the Rotter’s Internal-External Locus of Control instrument and academic performance (dependent variable) as measured by the grade received in a course among online learners at Montana State University Great Falls College of Technology (MSUCOT).
A correlation coefficient is a mathematical index of the relationship between two variables. It is expressed as a number that ranges between -1.00 and +1.00 and increases in strength as the amount of variance that one variable shares with another increases. The most frequently used measure of relationships is the Pearson product moment correlation represented by the small letter r (Salkind, 1991). Pearson r is appropriate when both variables to be correlated are expressed as ratio data or interval data. An assumption associated with the application of the Pearson r is that the relationship between the variables being correlated is a linear one (Gay 1996).

Pearson product moment correlation was utilized to measure the strength of the relationship between the independent and dependent variables in this study. The level of significance for this study was p=.05.

In the qualitative phase of the study, one-on-one interview sessions were conducted with 10 students successfully completing an online course. The typical qualitative interview is fairly unstructured and open-ended. The whole point is not to get answers to a predetermined set of standardized questions, but rather to find out what the participants have experienced, feel, or believe (Gay 1996). Interviews with the participants were recorded and transcribed for reporting purposes. Participants were given copies of the transcripts, asked to review the transcripts for meaning and accuracy, and were asked to return the copy of the transcripts with any additional comments to the questions that they wished to make.
Study Limitations

The following limitations are factors beyond the researcher’s control that may affect the results of the study.

1. RLOC is a self-reporting instrument that is subject to the problems associated with measuring the affective domain (Kerlinger, 1973).

2. Correlations obtained in a relationship study cannot establish cause-and-effect relationships between the variables that are correlated (Gay, 1996).

Study Delimitations

The following are delimitations in this study:

1. This study included online students in only one semester. It did not study a cohort of students through their educational online experience from entrance to graduation, nor does it make a comparison of students in their first online experience with students who have completed multiple courses using online methodologies.

2. This study will confine itself to online students attending MSUCOT during the fall 2004 semester. Results of the study may be different for data collected from online learners from different institutions, geographical areas, or studying in another academic semester.

3. Various extraneous independent variables, such as personality, social and environment factors, and course content that could have an effect on the dependent variable (academic performance) were not considered in the correlational Phase One of this study. Including these variables in this study was
not feasible. According to Gay (1996), a smaller number of carefully selected variables is much to be preferred to a larger number of carelessly selected variables in a quantitative analysis.

Summary

This chapter has outlined the methodology in Phase One and Phase Two of this study. Phase One was a quantitative analysis of the relationship between locus of control and academic performance, while Phase Two was a qualitative examination of the learning tactics used by successful online learners during fall semester 2004 at MSUCOT. In Chapter 4 the data is presented and the findings of each Phase are discussed.
CHAPTER 4

RESULTS AND RESEARCH FINDINGS

Introduction

The purpose of this mixed methods study was two-fold. The first purpose was to explore the relationship between academic performance and locus of control of fall semester 2004 online learners at MSUCOT. In 1966, Rotter wrote that the individual who has a strong belief that he can control his own destiny is likely to be more alert to those aspects of the environment which provide useful information and is said to have an internal locus of control. The relationship of academic performance and locus of control has been supported in many studies regarding face-to-face methodologies; but, because the online methodology is relatively new, the number of studies of the relationship between these variables in the online environment is more limited. This study would add to the knowledge base of online research.

The second purpose of the study was to investigate the learning tactics of successful online learners. Because the relationship between locus of control and academic performance has been documented in a number of studies, successful online students with an internal locus of control were interviewed to discover if they develop and use unique learning tactics while studying in the isolation of the online environment. The literature suggests that successful learners with an internal locus of control have
overcome many of the challenges that have kept unsuccessful learners from conquering the journey from the start of a course to its end, and that internal locus of control learners display more information-seeking behavior and make good use of that information. In Phase One of the study, the first research question was addressed: What is the relationship between internal locus of control as measured by Rotter’s Locus of Control (RLOC) instrument and academic success as measured by academic performance of fall 2004 online learners at MSUCOT? In Phase Two, the second question was addressed: Do successful online learners utilize unique learning tactics? This chapter will describe the phase one statistical analyses used to investigate the relationship between RLOC and academic performance, the findings of the analyses, and the weaknesses and inconsistencies of the data. During Phase two, the learning tactics used by online learners were explored through one-on-one interviews of 10 students from the WebCT sample with grades of “A” or “B” in online courses, and with RLOC scores less than or equal to 6. This chapter will analyze the responses to the 10 interview questions, discuss conclusions from the interviews, and introduce three themes that have emerged from the interview process.

Phase One—Quantitative Analysis

In phase one of this study, 600 students enrolled in 66 online and hybrid courses at MSUCOT during fall semester 2004 were entered into the “Learning Tactics Study” WebCT shell. Once the shell was created in WebCT and the students were entered into the shell, the “Learning Tactics Study” course was visible to the students at the login screen. The students were invited to participate in the study through the e-mail function
of the WebCT shell. Three icons on the homepage of the shell represented the three steps of participation in the study as shown in Figure 1.

*Figure 1.* WebCT homepage of the “Learning Tactics Study”

An e-mail message outlining the description of the study, an invitation to participate, the instructions for participating in the study, and consent to participate disclosure criteria were sent to the participants. This message appeared as an unopened envelope on the login screen of the shell. Two subsequent reminder e-mail messages asking for participation were sent in the same manner. In addition, a postcard reminder was sent to all the students prior to the last e-mail reminder encouraging participation. The instructors of each of the 66 online and hybrid courses were sent two e-mail messages requesting that they encourage the students in their online courses to participate (see Appendix C—Invitations to Participate Letter etc.). Of the 600 students entered into WebCT, 595 completed their online class and received a grade and 5 dropped the class. Of the 125 students that elected to participate in the study, 122 read the instructions at
step one, granted the researcher permission to access their online grades by e-mailing their unique Banner ID number at step two, and completed the RLOC instrument and demographic questions at step three. Three of the 125 students either did not give permission, or listed classes from the spring 2005 semester instead of the fall 2004 semester and were removed from the study. The age, gender, address, Banner ID number and the online course number and name for each student in the population were downloaded into Excel files from the Registrar’s records.

Testing the WebCT sample to the WebCT population

In order to determine if the sample of online learners was statistically different from the population of the WebCT shell, two-way contingency table analyses using SPSS were conducted on age and gender for the population and the sample. Gender was categorized on male and female, and age was combined in six categories ranging from the age of 15 to 65. Tables 1 and 2 illustrate that the results showed that the differences between the population and sample with respect to gender and age were not statistically significant (WebCT Population Chi-Square (5, N = 595) = 2.787, p = .733, and Sample Pearson Chi-Square (5, n = 122) = 2.647, p = .754).
### Table 1

**Two-way contingency table on gender and age for the WebCT population (N = 595)**

<table>
<thead>
<tr>
<th>Gender * Age Crosstabulation</th>
<th>15-21</th>
<th>22-28</th>
<th>29-35</th>
<th>36-42</th>
<th>43-50</th>
<th>51-65</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gender Female</strong></td>
<td>123</td>
<td>155</td>
<td>65</td>
<td>54</td>
<td>46</td>
<td>18</td>
<td>461</td>
</tr>
<tr>
<td>Count</td>
<td>124.0</td>
<td>151.9</td>
<td>69.0</td>
<td>55.8</td>
<td>42.6</td>
<td>17.8</td>
<td>461.0</td>
</tr>
<tr>
<td>% within Gender</td>
<td>26.7%</td>
<td>33.6%</td>
<td>14.1%</td>
<td>11.7%</td>
<td>10.0%</td>
<td>3.9%</td>
<td>100.0%</td>
</tr>
<tr>
<td>% within Age</td>
<td>76.9%</td>
<td>79.1%</td>
<td>73.0%</td>
<td>75.0%</td>
<td>83.6%</td>
<td>78.3%</td>
<td>77.5%</td>
</tr>
<tr>
<td>% of Total</td>
<td>20.7%</td>
<td>26.1%</td>
<td>10.9%</td>
<td>9.1%</td>
<td>7.7%</td>
<td>3.0%</td>
<td>77.5%</td>
</tr>
<tr>
<td><strong>Gender Male</strong></td>
<td>37</td>
<td>41</td>
<td>24</td>
<td>18</td>
<td>9</td>
<td>5</td>
<td>134</td>
</tr>
<tr>
<td>Count</td>
<td>36.0</td>
<td>44.1</td>
<td>20.0</td>
<td>16.2</td>
<td>12.4</td>
<td>5.2</td>
<td>134.0</td>
</tr>
<tr>
<td>% within Gender</td>
<td>27.6%</td>
<td>30.6%</td>
<td>17.9%</td>
<td>13.4%</td>
<td>6.7%</td>
<td>3.7%</td>
<td>100.0%</td>
</tr>
<tr>
<td>% within Age</td>
<td>23.1%</td>
<td>20.9%</td>
<td>27.0%</td>
<td>25.0%</td>
<td>16.4%</td>
<td>21.7%</td>
<td>22.5%</td>
</tr>
<tr>
<td>% of Total</td>
<td>6.2%</td>
<td>6.9%</td>
<td>4.0%</td>
<td>3.0%</td>
<td>1.5%</td>
<td>.8%</td>
<td>22.5%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>160</td>
<td>196</td>
<td>89</td>
<td>72</td>
<td>55</td>
<td>23</td>
<td>595</td>
</tr>
<tr>
<td>Count</td>
<td>160.0</td>
<td>196.0</td>
<td>89.0</td>
<td>72.0</td>
<td>55.0</td>
<td>23.0</td>
<td>595.0</td>
</tr>
<tr>
<td>% within Gender</td>
<td>26.9%</td>
<td>32.9%</td>
<td>15.0%</td>
<td>12.1%</td>
<td>9.2%</td>
<td>3.9%</td>
<td>100.0%</td>
</tr>
<tr>
<td>% within Age</td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
</tr>
<tr>
<td>% of Total</td>
<td>26.9%</td>
<td>32.9%</td>
<td>15.0%</td>
<td>12.1%</td>
<td>9.2%</td>
<td>3.9%</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

**Chi-Square Tests**

<table>
<thead>
<tr>
<th></th>
<th>Value</th>
<th>df</th>
<th>Asymp. Sig. (2-sided)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Chi-Square</td>
<td>2.787</td>
<td>5</td>
<td>.733</td>
</tr>
<tr>
<td>Likelihood Ratio</td>
<td>2.834</td>
<td>5</td>
<td>.726</td>
</tr>
<tr>
<td>Linear-by-Linear Association</td>
<td>.088</td>
<td>1</td>
<td>.767</td>
</tr>
<tr>
<td>N of Valid Cases</td>
<td>595</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. 0 cells (0%) have expected count less than 5. The minimum expected count is 5.18.
Table 2

Two-way contingency table on gender and age for the WebCT sample (n = 122)

<table>
<thead>
<tr>
<th>Gender</th>
<th>Age</th>
<th>Count</th>
<th>Expected Count</th>
<th>% within Gender</th>
<th>% within Age</th>
<th>% of Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>15-21</td>
<td>25</td>
<td>24.2</td>
<td>24.5%</td>
<td>86.2%</td>
<td>20.5%</td>
</tr>
<tr>
<td></td>
<td>22-28</td>
<td>27</td>
<td>26.8</td>
<td>26.5%</td>
<td>84.4%</td>
<td>22.1%</td>
</tr>
<tr>
<td></td>
<td>29-35</td>
<td>16</td>
<td>17.6</td>
<td>15.7%</td>
<td>76.2%</td>
<td>13.1%</td>
</tr>
<tr>
<td></td>
<td>36-42</td>
<td>13</td>
<td>14.2</td>
<td>12.7%</td>
<td>76.5%</td>
<td>10.7%</td>
</tr>
<tr>
<td></td>
<td>43-50</td>
<td>12</td>
<td>10.9</td>
<td>11.8%</td>
<td>92.3%</td>
<td>9.8%</td>
</tr>
<tr>
<td></td>
<td>51-65</td>
<td>9</td>
<td>8.4</td>
<td>8.8%</td>
<td>90.0%</td>
<td>7.4%</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>102</td>
<td>102.0</td>
<td>100.0%</td>
<td>83.6%</td>
<td>83.6%</td>
</tr>
<tr>
<td>Male</td>
<td>15-21</td>
<td>4</td>
<td>4.8</td>
<td>20.0%</td>
<td>13.8%</td>
<td>3.3%</td>
</tr>
<tr>
<td></td>
<td>22-28</td>
<td>5</td>
<td>5.2</td>
<td>25.0%</td>
<td>15.6%</td>
<td>4.1%</td>
</tr>
<tr>
<td></td>
<td>29-35</td>
<td>5</td>
<td>3.4</td>
<td>25.0%</td>
<td>23.8%</td>
<td>4.1%</td>
</tr>
<tr>
<td></td>
<td>36-42</td>
<td>4</td>
<td>2.8</td>
<td>20.0%</td>
<td>23.5%</td>
<td>3.3%</td>
</tr>
<tr>
<td></td>
<td>43-50</td>
<td>1</td>
<td>2.1</td>
<td>5.0%</td>
<td>7.7%</td>
<td>.8%</td>
</tr>
<tr>
<td></td>
<td>51-65</td>
<td>1</td>
<td>1.6</td>
<td>5.0%</td>
<td>10.0%</td>
<td>.8%</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>20</td>
<td>20.0</td>
<td>100.0%</td>
<td>16.4%</td>
<td>16.4%</td>
</tr>
<tr>
<td>Total</td>
<td>15-21</td>
<td>29</td>
<td>29.0</td>
<td>23.8%</td>
<td>100.0%</td>
<td>23.8%</td>
</tr>
<tr>
<td></td>
<td>22-28</td>
<td>32</td>
<td>32.0</td>
<td>26.2%</td>
<td>100.0%</td>
<td>26.2%</td>
</tr>
<tr>
<td></td>
<td>29-35</td>
<td>21</td>
<td>21.0</td>
<td>17.2%</td>
<td>100.0%</td>
<td>17.2%</td>
</tr>
<tr>
<td></td>
<td>36-42</td>
<td>17</td>
<td>17.0</td>
<td>13.9%</td>
<td>100.0%</td>
<td>13.9%</td>
</tr>
<tr>
<td></td>
<td>43-50</td>
<td>13</td>
<td>13.0</td>
<td>10.7%</td>
<td>100.0%</td>
<td>10.7%</td>
</tr>
<tr>
<td></td>
<td>51-65</td>
<td>10</td>
<td>10.0</td>
<td>8.2%</td>
<td>100.0%</td>
<td>8.2%</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>122</td>
<td>122.0</td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

Chi-Square Tests

<table>
<thead>
<tr>
<th>Test</th>
<th>Value</th>
<th>df</th>
<th>Asymp. Sig. (2-sided)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Chi-Square</td>
<td>2.647a</td>
<td>5</td>
<td>.754</td>
</tr>
<tr>
<td>Likelihood Ratio</td>
<td>2.695</td>
<td>5</td>
<td>.747</td>
</tr>
<tr>
<td>Linear-by-Linear Association</td>
<td>.035</td>
<td>1</td>
<td>.852</td>
</tr>
<tr>
<td>N of Valid Cases</td>
<td>122</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. 5 cells (41.7%) have expected count less than 5. The minimum expected count is 1.64.
According Green and Salkind (1997) there is not a simple answer to the question of what sample size is large enough when conducting a two-way Chi-square analysis, and not all statisticians agree on that size.

For the Chi-square test to give accurate results when dealing with an $r \times c$ table, all expected frequencies must be large. For such situations there has been much debate among statisticians as to the definition of large. Some statisticians have found that the test gives accurate results as long as all expected frequencies equal or exceed 0.5. Other statisticians, more conservative in their approach, require that no more than 20% of the cells contain expected frequencies less than 5 and no cells have expected frequencies less than 1. A reasonable compromise between these points of view is to make sure that each expected frequency is at least 1. To accomplish this, it may be necessary to collapse two or more low-expected frequency categories into one category in the contingency table before performing the test (Berenson, Levine, & Krehbiel, 2004 p.461).

Green and Salkind (1997) stated that, if more than 20% of the cells have expected frequencies that are less than 5, you should be concerned about the validity of the results. The contingency table for the WebCT population analysis (Table 1), revealed one cell with a frequency of 5 which was deemed acceptable. However, the contingency table for the WebCT sample (Table 2) revealed 4 cells (more than 20% of the cells) with frequencies of 5 or less, which were unacceptable frequencies to rely on the analysis of the sample. The age categories for the sample were then collapsed to three categories, the data were analyzed, and the cell frequency improved (see Table 3). One cell (less than 20% of the cells) had a frequency of 2 and the results were again not statistically significant (Second WebCT Sample Chi-Square $(5, \ N = 122) = 1.166, \ p = .558$, Cramer’s $V = .098$). These analyses support that there is no statistically significant difference between the WebCT sample and the WebCT population with respect to age and gender.
Table 3

Two-way contingency table on gender and collapsed age--WebCT sample (n = 122)

<table>
<thead>
<tr>
<th>Gender * New Age Catagorization Crosstabulation</th>
<th>15-30</th>
<th>31-45</th>
<th>46-65</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female Count</td>
<td>58</td>
<td>26</td>
<td>18</td>
<td>102</td>
</tr>
<tr>
<td>Gender % within Gender</td>
<td>56.9%</td>
<td>25.5%</td>
<td>17.6%</td>
<td>100.0%</td>
</tr>
<tr>
<td>% within New Age Catagorization</td>
<td>84.1%</td>
<td>78.8%</td>
<td>90.0%</td>
<td>83.6%</td>
</tr>
<tr>
<td>% of Total Count</td>
<td>47.5%</td>
<td>21.3%</td>
<td>14.8%</td>
<td>83.6%</td>
</tr>
<tr>
<td>Male Count</td>
<td>11</td>
<td>7</td>
<td>2</td>
<td>20</td>
</tr>
<tr>
<td>Gender % within Gender</td>
<td>11.3%</td>
<td>5.4%</td>
<td>3.3%</td>
<td>20.0%</td>
</tr>
<tr>
<td>% within New Age Catagorization</td>
<td>15.9%</td>
<td>21.2%</td>
<td>10.0%</td>
<td>16.4%</td>
</tr>
<tr>
<td>% of Total Count</td>
<td>9.0%</td>
<td>5.7%</td>
<td>1.6%</td>
<td>16.4%</td>
</tr>
<tr>
<td>Male Total Count</td>
<td>69</td>
<td>33</td>
<td>20</td>
<td>122</td>
</tr>
<tr>
<td>Gender % within Gender</td>
<td>56.6%</td>
<td>27.0%</td>
<td>16.4%</td>
<td>100.0%</td>
</tr>
<tr>
<td>% within New Age Catagorization</td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
</tr>
<tr>
<td>% of Total Count</td>
<td>56.6%</td>
<td>27.0%</td>
<td>16.4%</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

Chi-Square Tests

<table>
<thead>
<tr>
<th>Test</th>
<th>Value</th>
<th>df</th>
<th>Asymp. Sig. (2-sided)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Chi-Square</td>
<td>1.166</td>
<td>2</td>
<td>.558</td>
</tr>
<tr>
<td>Likelihood Ratio</td>
<td>1.207</td>
<td>2</td>
<td>.547</td>
</tr>
<tr>
<td>Linear-by-Linear Association</td>
<td>.098</td>
<td>1</td>
<td>.755</td>
</tr>
<tr>
<td>N of Valid Cases</td>
<td>122</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. 1 cells (16.7%) have expected count less than 5. The minimum expected count is 3.28.

Gender demographics of the student body population for the fall 2004 semester were collected from the Registrar’s records and were compared with the WebCT shell population and the WebCT sample. Table 4 illustrates the data. The registrar’s records showed that 71.6% of the student body population was female and 28.3% were male. The
WebCT population was 77.5% female and 22.5% male. The WebCT sample had 83.6% female, and 16.4% male. Further supporting the WebCT sample represents the WebCT population and student body population with respect to gender distribution.

Table 4

*Comparison of age and gender variables with the WebCT population and sample and Student Body population.*

<table>
<thead>
<tr>
<th>Gender</th>
<th>Student Body Population</th>
<th>WebCT Population</th>
<th>WebCT Sample</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>71%</td>
<td>77.5%</td>
<td>83.6%</td>
</tr>
<tr>
<td>Male</td>
<td>28.3%</td>
<td>22.5%</td>
<td>16.4%</td>
</tr>
</tbody>
</table>

Grades and Locus of Control (RLOC)

The first question to be addressed in this study was: *What is the relationship between internal locus of control as measured by Rotter’s Locus of Control instrument and academic success as measured by academic performance of online learners?*

Online course grades for the 122 subjects were collected using the student records database and were categorized as A = 4, B = 3, C = 2, D = 1, and F = 0. RLOC scores for the subjects were extracted from step three of the WebCT shell. The RLOC instrument can have a range of scores from 0 to 23, with a low score representing an internal locus of control and a high score representing an external locus of control. As Table 5 shows, a percentage distribution of the RLOC scores revealed that 18.9 percent of the students scored 0-5 on the instrument, 59.0 percent scored 6-11, 18.9 percent scored 12-16, and 3.3 percent scored 17-23. Seventy-eight percent (18.9% + 59.0%) of the students scored
between 0-11, indicating that locus of control of the subjects was primarily internal. A percentage distribution of the grades showed that 57.4 percent of the students received “A”, 23.0 percent received “B”, 13.1 percent received “C”, 2.5 percent % received “D” and 4.1 percent received “F”. Eighty percent (57.4% + 23.0%) of the students received an “A” or “B” grade in the online course resulting in little variance in the grade distribution.

Table 5

Cross tabulation of WebCT Sample Grades and Locus of Control Scores (n = 122)

<table>
<thead>
<tr>
<th>Grade Categories</th>
<th>Locus of Control Score Categories</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0-5</td>
<td>6-11</td>
</tr>
<tr>
<td>F Count</td>
<td>0</td>
<td>4</td>
</tr>
<tr>
<td>F % within LOC Category</td>
<td>.0%</td>
<td>3.3%</td>
</tr>
<tr>
<td>D Count</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>D % within LOC Category</td>
<td>.8%</td>
<td>1.6%</td>
</tr>
<tr>
<td>C Count</td>
<td>2</td>
<td>8</td>
</tr>
<tr>
<td>C % within LOC Category</td>
<td>1.6%</td>
<td>6.6%</td>
</tr>
<tr>
<td>B Count</td>
<td>5</td>
<td>17</td>
</tr>
<tr>
<td>B % within LOC Category</td>
<td>4.1%</td>
<td>13.9%</td>
</tr>
<tr>
<td>A Count</td>
<td>15</td>
<td>41</td>
</tr>
<tr>
<td>A % within LOC Category</td>
<td>12.3%</td>
<td>33.6%</td>
</tr>
<tr>
<td>Total Count</td>
<td>23</td>
<td>72</td>
</tr>
<tr>
<td>% within Grade Category</td>
<td>18.9%</td>
<td>59.0%</td>
</tr>
<tr>
<td>% within LOC Category</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Pearson r correlation coefficient was used to determine if a relationship exists between the independent variable (RLOC) and the dependent variable (grade in the online course). The resulting Pearson r coefficient was -.068, p = .454 (see Table 6) and as such the analysis indicated that there is not a linear relationship between these variables. This finding was not consistent with the studies correlating RLOC and academic performance cited in Chapter 2.

Table 6

*Pearsons Product Moment Correlation Coefficient for WebCT sample grades and RLOC scores*

<table>
<thead>
<tr>
<th>Correlations</th>
<th>Grade</th>
<th>RLOC Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grade</td>
<td>Pearson Correlation</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>.</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>122</td>
</tr>
<tr>
<td>RLOC Score</td>
<td>Pearson Correlation</td>
<td>-.068</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>.454</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>122</td>
</tr>
</tbody>
</table>

There may have been a number of reasons for this inconsistency. Because of the preponderance of low RLOC score and high grades, the analysis showed no relationship between the variables. The WebCT sample was self-selected, and as such, the students that did participate may have been biased. Students with “A” grades and an internal locus of control may have been more willing to participate. It is possible that there is very little variance in the data between the WebCT sample and the WebCT population..

A Wilcoxon signed ranks test was conducted on the distribution of each letter grade in the WebCT sample and in the grade distribution of the WebCT population and
the results are illustrated in Table 8. This test was conducted to determine the variance in the WebCT sample grade distribution to the WebCT population grade distribution. Since the grade distribution of all students in the WebCT population was not associated with the names of the students, student privacy was not violated and the information could be analyzed for institutional purposes.

Table 7

*Distribution of Percentages of Grades in the WebCT Samples and WebCT Population*

<table>
<thead>
<tr>
<th>Grade</th>
<th>WebCT Sample Grade Distribution %</th>
<th>WebCT Population Grade Distribution %</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>57.3</td>
<td>46</td>
</tr>
<tr>
<td>B</td>
<td>22.9</td>
<td>27.2</td>
</tr>
<tr>
<td>C</td>
<td>13.1</td>
<td>12.4</td>
</tr>
<tr>
<td>D</td>
<td>2.4</td>
<td>2.7</td>
</tr>
<tr>
<td>F</td>
<td>4</td>
<td>11.4</td>
</tr>
</tbody>
</table>

For situations involving either matched items or repeated measurements of the same item, the nonparametric Wilcoxon test for the median difference can be used when the *t* test is not appropriate. The *t* test assumes data are interval or ratio scale and are normally distributed. When the assumptions for the Wilcoxon procedure are met, but the assumptions of the *t* test are violated, the Wilcoxon procedure is usually more powerful in detecting differences in the two populations. Even under conditions appropriate to the *t* test, the Wilcoxon test has proved to be almost as powerful (Berenson, 2004). The results of the Wilcoxon test, *Z* = -0.135, *p* = 0.893 (see Table 7) indicated that there was no
statistically significant difference between the medians of the WebCT sample grade distribution and the WebCT population grade distribution.

Table 8

Wilcoxon Signed Ranks Test for WebCT sample grades and WebCT population grades

<table>
<thead>
<tr>
<th>Ranks</th>
<th>N</th>
<th>Mean Rank</th>
<th>Sum of Ranks</th>
</tr>
</thead>
<tbody>
<tr>
<td>WebCT Population Grades - WebCT Sample Grades</td>
<td>2</td>
<td>3.50</td>
<td>7.00</td>
</tr>
<tr>
<td>Negative Ranks</td>
<td>3</td>
<td>2.67</td>
<td>8.00</td>
</tr>
<tr>
<td>Positive Ranks</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ties</td>
<td></td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Test Statistics^b

<table>
<thead>
<tr>
<th>WebCT Population Grades - WebCT Sample Grades</th>
<th>Z</th>
<th>Asymp. Sig. (2-tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive Ranks</td>
<td>-.135^a</td>
<td>.893</td>
</tr>
</tbody>
</table>

a. WebCT Population Grades < WebCT Sample Grades
b. WebCT Population Grades > WebCT Sample Grades
c. WebCT Population Grades = WebCT Sample Grades

Summary of Phase One—Quantitative Analysis

With respect to the variables of age, gender and grade distribution, there was no statistically significant difference between the WebCT sample and the WebCT population. It appears that the WebCT sample is reflective of the WebCT population,
and is composed primarily of successful internal locus of control online learners. The WebCT sample provided a pool of participants that would enable the study to address the second research question.

**Phase Two—Qualitative Analysis**

The purpose of research using the qualitative paradigm is to describe a specific entity or purposely selected persons within a specific context to gain insights about the phenomenon under investigation. In this case, there is no ability to generalize the results of the findings to any other situation or entities by the researcher (R. Howard & Borland, 2001 p. 109)

The second research question of the study was: *Do successful online learners utilize unique learning tactics?* Rotter (1996) suggested that the individual who has a strong belief that he can control his own destiny is likely to be more alert to those aspects of the environment which provide useful information for future behavior. McCombs (1991) suggested that the concept of “self as agent” underlies the internal locus of control construct and that the self as agent can consciously or unconsciously direct, select, and regulate the use of knowledge structures and intellectual process in support of personal goals, intentions, and choices. The subjects in the WebCT sample are successful internal locus of control online learners; the type of students that the literature suggests will utilize unique learning tactics.

In order to discover the answer to the second research question of the study, ten students from the WebCT sample with a RLOC score of six or less were asked to participate in one-on-one interviews. A copy of the interview questions can be found at Appendix C. Because the list of students in the lowest RLOC category (0-5 score) totaled only 23, the likelihood of being able to arrange to interview a sufficient number of
students with such a small number to draw from seemed small, so the RLOC score of 6 was included in the list. The total number of students in the pool of students with an RLOC of 6 or less was 42. Six of those students received grades of “C”, “D”, or “F”.

Starting with the student with the lowest RLOC score, the students were called at the telephone number listed in the student records and asked if they would be interested in participating in Phase Two, which was described in the instruction letter in step one of the WebCT shell. Telephone calls were made to all 42 of the students, including those students with grades of “C”, “D”, or “F”. Eleven students agreed to participate, and ten of those students were able to schedule time for the interview. Some of the reasons that the other students did not participate included: (1) student records did not supply an active telephone number and the students could not be contacted; (2) students did not return telephone calls, and (3) students refused to participate. Many of the students who refused to participate stated that family, employment, and school responsibilities were their first priorities. One twenty-seven year old female stated, “I can’t add even one more project to my plate right now, sorry”.

Profile of Participants

Illustrated in Figure 2 are some of the demographic characteristics of the participants. Marital status, number of children and employment status were collected from the participants in order to glean an understanding of the outside demands on the participants’ time. Only one of the participants fell in the traditional student age bracket—18 years to 22 years old. Three of the participants did not have children or were married. Five of the participants had full-time jobs, while two had part-time positions, and the one traditional student regularly worked 45-50 hours per week. All of
the participants received a grade of “A” or “B” in the online course. None of the 6 students in the WebCT sample with grades of “C”, “D”, or “F” were available to interview.

Figure 2 *Demographics of Phase Two Participants*

<table>
<thead>
<tr>
<th>Student</th>
<th>Gender</th>
<th>Age</th>
<th>OL Grade</th>
<th>RLOC Score</th>
<th>Martial Status</th>
<th>Children</th>
<th>Employment</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Female</td>
<td>25</td>
<td>A</td>
<td>6</td>
<td>Single</td>
<td>1-2 yr old</td>
<td>Full-time</td>
</tr>
<tr>
<td>B</td>
<td>Male</td>
<td>47</td>
<td>A</td>
<td>6</td>
<td>Married</td>
<td>2-gone</td>
<td>No</td>
</tr>
<tr>
<td>C</td>
<td>Male</td>
<td>20</td>
<td>B</td>
<td>6</td>
<td>Engaged</td>
<td>No</td>
<td>Full-time</td>
</tr>
<tr>
<td>D</td>
<td>Female</td>
<td>35</td>
<td>A</td>
<td>6</td>
<td>Divorced</td>
<td>1-teenager</td>
<td>Part-time</td>
</tr>
<tr>
<td>E</td>
<td>Male</td>
<td>41</td>
<td>B</td>
<td>4</td>
<td>Single</td>
<td>No</td>
<td>Part-time</td>
</tr>
<tr>
<td>F</td>
<td>Female</td>
<td>53</td>
<td>A</td>
<td>4</td>
<td>Married</td>
<td>1-home</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3-gone</td>
<td></td>
</tr>
<tr>
<td>G</td>
<td>Female</td>
<td>34</td>
<td>A</td>
<td>3</td>
<td>Married</td>
<td>No</td>
<td>Full-time</td>
</tr>
<tr>
<td>H</td>
<td>Male</td>
<td>25</td>
<td>B</td>
<td>6</td>
<td>Engaged</td>
<td>No</td>
<td>Full-time</td>
</tr>
<tr>
<td>I</td>
<td>Male</td>
<td>35</td>
<td>B</td>
<td>6</td>
<td>Divorced</td>
<td>2-3 days</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>per week</td>
<td></td>
</tr>
<tr>
<td>J</td>
<td>Female</td>
<td>46</td>
<td>A</td>
<td>4</td>
<td>Married</td>
<td>2-gone</td>
<td>Full-time</td>
</tr>
</tbody>
</table>

Even though the WebCT sample was eighty-four percent (102/122 = 83.6%) female, the participants willing to be interviewed for Phase Two were equally split between females and males. One of the female participants was not currently employed outside of the home since she was caring for her elderly parents. Three of the male
participants have been injured on the job, and have returned to school through a vocational-rehabilitation retraining program. All three of these participants said that the on-the-job injury was the reason for the return to school.

In an effort to better understand their reasons for attending the College and taking the online courses, all of the students were asked the following question prior to beginning the interview session. Their responses seem to represent a common perspective on the positive nexus between education and income (Brier, 2004; Occupational Outlook Quarterly, 2002, 1999).

*What are your reasons for attending this College?*

________________________________________________________________________

“So that eventually I can have a better life.”

“I have worked a lot of places, and I’m smarter than those previous positions have given me credit for. I want a college degree so that I can make more money.”

“I got to a point in my life that I needed to cause an action in my life to produce different results, and education would take me down the road to a more secure financial position.”

“I have been working in a doctor’s office for about eight years…the next step was to be the nurse.”

“I am applying to a number of schools to enroll in an MBA, and I choose to go back to school to take business classes.”

“I want to find a better paying job…a job where I belong.”

________________________________________________________________________

Though the responses above may not have been unique responses to a question that is frequently asked of college students, all of them are indicative of persons with an internal locus of control who expect that a reinforcement or an outcome of their behavior is contingent on their own behavior or personal characteristics (Rotter, 1990).
Interview Settings and Locations

The first interview took place in a small conference room in the Business wing of MSUCOT. The student and the researcher were alone in the room, and the interview was tape recorded while the researcher took handwritten notes. The notes of this interview were transcribed, and a copy of the transcript was delivered to the student the next school day as a review and accuracy check. All of the interviewees were given a copy of the interview protocol at the beginning of the interview, in addition to having the questions read to them by the researcher during the interview. All of the interviewees were given copies of the transcript to take with them and encouraged to contact the researcher if they wished to modify or add to the transcript at a later date.

Seven of the interviewees were interviewed in the researcher’s office at MSUCOT. The researcher can type quickly, and in order to more efficiently expedite the interview the researcher typed the responses during the interview. This also allowed the students to review the transcript immediately after the interview, and therefore insured that the interviewees were given an opportunity to correct or add comments to the transcript.

Two of the ten students lived in excess of 50 miles from the College, and therefore face-to-face interviews were not feasible. The students were agreeable to a teleconference interview, and these interviews were also conducted in the researcher’s office with a speaker telephone. These interviews were taped recorded and the responses were transcribed during the interview. The transcript was e-mailed to the participants immediately after the interview, and these students were also encouraged to contact the researcher if corrections or additions were indicated. Two of the 10 students returned the
interview transcripts with additions and corrections which were added to the original transcript of each of the interviews.

The Interviews

Before each of the interviews, the participants were reminded of the purpose of the study and that their identity would remain confidential. The participants were told that when the study was completed the taped interviews and other records that tied their identity to the study would be destroyed. The students were handed the interview protocol (see Appendix C) and asked to note that the interview was divided into three focus areas; Studying Approaches, Study Habits, and Changes in Studying. The questions were numbered sequentially within each of the three focus areas. At that point, the first interview question was asked.

Following the specific responses to each of the interview questions below are the results of the researcher’s analysis of the responses. This analysis developed as themes began to emerge from the interviews. The researcher used a color indexing system to highlight common words and themes within the transcripts, and then further coding analysis was conducted on the compiled color coded transcript content. Ritchie and Lewis (2003) recommend this type of indexing and coding process after themes have emerged from the raw data.

*Studying Approaches: 1. When you first enroll in a course, how do you prepare to study?*

<table>
<thead>
<tr>
<th>Student A</th>
<th>I don’t study before class starts. I buy the book the first day that I can, but I don’t look at it until class starts. Mainly, I just make sure that I have everything I’ll need.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student B</td>
<td>Once I’ve gotten into the class, I read the text and follow the instructor’s outline of when the text needs to be read in the order the instructor has set</td>
</tr>
</tbody>
</table>
it up. I take 15-16 credits each semester, and I don’t have time to read ahead. It is a time management issue.

Student I: I check to see if it is reading or lecture intensive, and how much I have do read each night.

Student C: I look at the syllabus and look at my schedule and prepare from there.

Student J: Wait until the class starts. I make sure that I understand the syllabus and schedule time to get assignments done.

Student F: I determine the time investment necessary. I do something every single day. I look at the syllabus and look at the first week of classes…I try to get a feel for the rhythm of the class and I try to identify what will be harder for me than for others. For me it takes more time to study…I want to do well.

Student D: Right before the term begins, I read Chapter 1. I would like to have the syllabus, but I don’t always. I read the course description.

Student E: I usually go through the material before classes. I read the syllabus so that I know what the teacher is looking for. I’m usually a chapter or two ahead of the syllabus, and then I review when the class gets to that material.

Student G: I always look at the book and get them as early as possible. I read ahead and preview the chapter summary…I’m usually anxious to know what the semester will be like.

Student H: I set up a timeline and follow the teacher’s syllabus pretty closely, and that keeps me in line. I prepare work a week in advance, usually on Sunday through Wednesday.

Students A, B, I, C, and J appeared to allow the instructor to structure the course and saw no point in engaging in the course until the parameters of the course had been established. At the same time, these students were prepared to begin once the course started. Student F waited to find the rhythm of the course and Students D, E, G and H worked ahead of the schedule.

Studying Approaches: 2. When you take classes with different delivery methods, such as online or hybrid, do you manage you studying differently than a face-to-face class?
Student A  I like to learn on my own. I didn’t want to come to a face-to-face (F2F) class. I don’t read as well when I am in a F2F class. I don’t read it thoroughly because whatever I miss, I will fill in with a lecture. But I learn it better on my own. I also do better with time management for online classes because I am able to do things my way. When I have to conform to F2F time frames I struggle more.

Student B  Yes, how you prepare to study online (OL) is different. OL courses do not have the option of instant responses from the instructor when you run across an area you do not understand. So my study habits are, read the text and understand the concept—to me that is crucial. If I do not understand the concept, then my first resource is the instructor.

Student G  I would say I pay attention more to OL classes. I’m on the computer at work and can easily get to the OL class on breaks or lunch.

Student F  OL gives you time to digest the information because it is in print.

Student J  OL is a little different…primarily weekends is homework. I do the work a couple of days ahead of schedule.

Student C  I read the OL materials more than F2F…I don’t usually read the F2F materials twice because the instructor fills in some of the gaps in the class.

Student D  I read the material more carefully, usually twice in my OL classes. I use the Internet for outside resources, and some instructors expect you to do so.

Student E  OL classes require more prep. You have to be more focused on the studying than F2F. In OL classes it is up to you to do the work and stay focused on the class. I go over the material more often than F2F.

Student H  I planned about a week ahead when I would do the work of the OL class and stayed on that plan…usually Sunday. I set deadlines for myself.

Student I  OL classes do not have the lecture so you have to plan for more reading time and research time. Plan on double the time with reading than a F2F class.

All of the students commented on the time required to learn and that the student has control of the learning. Several of the students commented that they prefer to work
ahead of the schedule. Learners with an internal locus of control tend to have higher rates of completion in distance education because they put in the necessary time and hard work and they expect this effort to affect their academic success (Dille & Mezack, 1991; Parker, 1999).

**Studying Approaches: 3. Has your approach to learning and studying changed since you have been enrolled in this College? Explain.**

<table>
<thead>
<tr>
<th>Student A</th>
<th>It is different from when I was in high school. I want to become a smarter person now. I have never had good study habits, so that has not changed.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student B</td>
<td>My study skills were rusty. It has been an evolutionary process for me. The basis was there as far as reading the text and using other resources. My approach is different; I may read the text several times. I see education differently than I did when I was in high school.</td>
</tr>
<tr>
<td>Student G</td>
<td>When I was younger I didn’t study half as much as I do now. It has to do with age and the fact that I’m paying for it now. Now I realize that I have to read a lot more.</td>
</tr>
<tr>
<td>Student F</td>
<td>Yes, even from my first semester to second semester…I took more time for studying and was more disciplined and more mature about the time and seriousness of my courses. If I wanted those results, I had to produce them.</td>
</tr>
<tr>
<td>Student J</td>
<td>No, feel like I need to put a lot of time into my studies and do the best I can. I have always felt that way.</td>
</tr>
<tr>
<td>Student D</td>
<td>I learned what is necessary….necessary is to understand the material; put in more effort to understand if that is necessary. My confidence has increased.</td>
</tr>
<tr>
<td>Student E</td>
<td>I read some literature on study habits. I read the material and focus and spend time studying.</td>
</tr>
<tr>
<td>Student H</td>
<td>Yes, but it wasn’t because of the OL course. I did the same for F2F classes in my undergrad work, but not to the same extent because I didn’t have a full-time job then.</td>
</tr>
<tr>
<td>Student I</td>
<td>I read and then research more to come to an understanding for me. I know what I feel I need to know.</td>
</tr>
</tbody>
</table>
Some of the responses to this question returned to the amount of time required to take the online courses. The students compared experiences at different times such as high school, other post-secondary institutions and different times in their lives. The students expressed a need to do what was necessary to get the desired results. “If I wanted those results, I had to produce them.”

Study Habits: 1. Would you say that you employ study habits in your learning? If yes, can you describe them? If no, can you explain how you study the content in your courses?

<table>
<thead>
<tr>
<th>Student A</th>
<th>I read the book, don’t take notes, don’t make outlines, just read it. At test time I just skim over the material.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student B</td>
<td>Get down and read the material, re-read or use other resources. Time management is crucial...have to be dedicated, structure certain times of the day or parts of the week to do the OL classes and you must do it.</td>
</tr>
<tr>
<td>Student E</td>
<td>Basically, spending time reading the material and doing the homework…and doing more than the assigned homework. In Math, I did the suggested homework and it really helped to learn the material.</td>
</tr>
<tr>
<td>Student F</td>
<td>I do employ study habits. I read the material first; read it several times. Then I go to the OL site and use anything that is there, quizzes, videos. If I still have trouble, I go to the instructor. I also go to people who affirm that I can do this…I seek people to tell me that I can do this.</td>
</tr>
<tr>
<td>Student C</td>
<td>If I’m unable to read the text, then I go to the terminology. I read the boxes and diagrams in the chapter. I’m a visual learner. I usually come home from work or activities after work and study and do homework.</td>
</tr>
<tr>
<td>Student D</td>
<td>It depends on the class. For a math class you learn and then you know. You study by the examples and relate the examples to the test questions. But for a Payroll class, there are laws, and you have to study differently...memorize.</td>
</tr>
<tr>
<td>Student G</td>
<td>I read the textbook every night and write and take notes. I read the chapter review first and then read the chapter. I handset my notes; I don’t have a computer at home. I highlight the textbook and then study the highlights.</td>
</tr>
</tbody>
</table>
| Student H       | I set a schedule or timeframe in which to do the work. I used my co-workers to help with my homework...another set of eyes. I read the
summary first and then go back and skim the chapters….its a time issue.

Student J  Yes, scheduling the time to do the required work. Time management and scheduling.

Scheduling time to read the textbook more than one time appears multiple times in the responses to this question as well as the importance of time management and scheduling. The students indicated that they need to have a set time to do the online work, and as in previous response sets the instructor is used if the student experiences difficulty.

Study Habits: 2. Explain how time and place influence your learning?

Student A  I study at night and at work on the weekends because it is slow. I just study every night. I don’t have time to do any extra…I do the minimum. I could learn a lot more if I had more time.

I don’t like to come to the school to study. I don’t like people around me; I don’t want to be bothered. It needs to be quiet…no distractions. I have to sit in a chair, I fall asleep in bed.

Student B  The advantage of OL is that it gives me the flexibility to work around my other classes. When I’m registering for my classes I am picking specific times. I can work my OL schedule to fit around my other classes. You also need to follow through when you set those times. If I set my OL classes on Friday, I need to follow through and that is time management.

For me place is always home…quiet…alone. On campus is harder, I find someone I know…my attention is diverted on campus.

Student C  I do it after work; no other time. I study the hard stuff on Saturday when I have more energy. I may have the radio or TV on for background noise. I need a brighter light to stay alert; yellow light in the room makes me tired.

I usually do not study at school, other people sometimes distract me. I study in my bedroom in front of my computer. If it’s worth more points, I do that first.

Student D  I learn best at home…interruptions at other places. No television; no noise. I try to get my studying done before my child comes home from school at 3:00.
OL is weekends. Set the schedule and stay with the schedule…then I’m not backed up. I don’t like to wait until the last minute. I schedule work to be done in advance of the deadline, which allows for time to modify my assignments if necessary.

Student E I usually study in the evenings and later in the night. I work in the mornings…before and after class. I usually check my OL class one to two days per week, and I work 2-3 chapters ahead in the OL classes.

I normally study at home—TV is on. I need the drawing table, so I do my drafting work at school.

Student F I divide the assignment into parts to be done every single day. Won’t go to bed without doing that work.

EZ chair in a quiet place. I must be comfortable in order to study.

Student G Yes, I make my own schedule and work until 4:30. I planned for continuous periods of study instead of short 5-10 minutes here and there. I’ll study on Saturday but not Sunday. I study right after my hybrid class at school.

It’s hard to study at home; husband and outside influences and the telephone. I have a key to the doctor’s office and I could work quietly there.

Student H I do all my work in my office at work on Sunday, or I may stay at work on Monday, Tuesday or Wednesday. It is a good setting to work with a high speed Internet access. It’s quiet no music or TV

Student I I stay more focused at school. I study at a particular place in the library where I meet some other students in my classes; there is a lot of talking so then I hide at a computer station to get the actual work done.

My time is broken up during the week and I block in time for each OL class. I determine the time during the first week and then stick to that schedule.

Student J I do OL classes by noon on Saturday. Weekend work helps me to be more prepared for the next week’s work.

I study in a room that is a study area with a computer; quiet room. I don’t like to be in a dark room. I need a good light…bright and sunny…like the kitchen table.

Responses to these questions provided some insight into the importance of time and place to online learners. Studying in a quiet, comfortable place was important and
was usually in the home. Several students commented on the difficulty of studying on
the campus and that studying was done on a particular day or time of the day. Two of the
students commented on the importance of good lighting while they studied.

*Study Habits: 3. Do you seek outside resources to enhance your learning? If yes,
describe those resources. If no, explain why outside resources are not needed.*

---

**Student A**
I don’t use outside resources…don’t use the Internet. I rarely use the supplemental material, I plan to use it….but I never do….I might not use it unless it was required.

**Student B**
Yes, 90% from the textbook depending on the text…then I go to the instructor. Sometimes I will use discussion boards in OL classes.

**Student C**
I use the Internet, and do google searches. I use books that I already have and sometimes use the library databases and journals. I use the CD that came with the textbook and I watch the video cases.

**Student D**
The Internet is my main outside resource…outside resources are always needed in all my classes.

**Student E**
I’ll use the Internet and the learning center here at the campus if I’m stuck. I’ll ask the instructor; usually I go online and just search for it.

**Student F**
You may not be able to trust information on the Internet. I will go to discussion areas in the OL classes; it makes you feel that you are part of the class.

**Student G**
I’ll use the internet and the doctor has some books that I have used. I don’t use the resources from the library yet…have not needed to.

**Student H**
I’ll use the Internet to get clarification on text issues and research was required on some of the assignments.

**Student I**
Yes, the Internet and not so much the library databases. Information from books goes out-of-date quickly.

**Student J**
I usually use the class information provided. Time keeps me from using them a lot. Sometimes I use the Internet to support class material.
After the instructor, the Internet appears to be the outside resource of choice, with only one student questioning the trustworthiness of the information obtained on the Internet. Hoffman, Novak, and Schlosser (2003) found that the more consumers believe they control their own destinies, the more they use the Web instrumentally, as a supplement to other activities. Because internals adopt and master riskier and innovative strategies, they are likely among the first to be attracted to the Internet and the most dedicated to mastering it.

**Study Habits: 4. Do you study with fellow students?**

<table>
<thead>
<tr>
<th>Student A</th>
<th>No, unless it is required like a group project. I like to learn on my own, and I don’t want to bother with everyone else’s problems…that is why I’m taking online courses.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student B</td>
<td>Usually not…generally no. I’ll use my text and the instructor.</td>
</tr>
<tr>
<td>Student C</td>
<td>Never… but, I don’t mind working with other students. Coordination is difficult, and I use my own ideas unless someone is really good at what they are doing.</td>
</tr>
<tr>
<td>Student D</td>
<td>I don’t like to study with another person. I need to do it alone in order to learn it. But, I will use other students to confirm that I am on the right track with projects.</td>
</tr>
<tr>
<td>Student E</td>
<td>Yes, I do spend some time with other students here on campus.</td>
</tr>
<tr>
<td>Student F</td>
<td>Most of my studying and homework is done at home and done alone…I may discuss at the discussion area.</td>
</tr>
<tr>
<td>Student G</td>
<td>No, never. Don’t like it that much….don’t like group work…chatting and time wasting.</td>
</tr>
<tr>
<td>Student H</td>
<td>Not for these classes. I can read other conversations in the discussion area and was able to get answers from other students’ questions. I’m looking for an education and getting the most out of the class. Flexibility is why I’m taking an OL class, and I’m not looking for a friend out of the class.</td>
</tr>
<tr>
<td>Student I</td>
<td>Yes, I do study with other students within the same class.</td>
</tr>
</tbody>
</table>
The student responses to this question provided some unexpected results. Several of the students appeared adamant that they preferred not working in groups in the online courses. Recent online publications (Ko & Rossen, 2004; R. M. Palloff & Pratt, 2005) extensively discuss the need for students to collaborate in the online environment. It appears that internal locus of control students prefer to interact with the content rather than fellow students.

Changes in Studying: 1. Have you had to change your approach to studying as a result of taking a particular course? If yes, explain.

Student A No…I haven’t changed my approach.

Student B I guess I study differently for different courses. The content drives the difference in approach. There are times when I can’t study Accounting…I have to stop and work on the idea that has popped into my head. I generally stay focused, when I get focused.

Student C You have to watch the deadlines for OL classes.

Student D I was nervous my first semester, and I could have taken it a little easier on myself.

Student E Not yet…my study skills match my current classes pretty well. There are some classes that I would not recommend taking OL.

Student F Last semester, I took a math class that changed the amount of time. It took more time and different thinking.

Student G Not yet.

Student H No, I have not made changes to my approach.

Student I Yes, OL is definitely a change for me. I learn best listening to someone discuss the content. You must dig out the content; you are doing the work to learn the material rather than the teacher just telling you the material.
Student J  No not really, I use the same habits for both types of classes.

The students appear to be relatively comfortable with their approaches to learning. There is some evidence that they recognized learning behaviors that did not work for them in the past and they have made adjustments. Liu (2002) found that online instruction can improve students’ sense of personal competence, self-responsibilities, and beliefs about their own learning, it can be an effective method to promote change from external locus of control to internal locus of control.

Changes in Studying:  2. Do you intend to approach studying differently next semester?

Student A  I always intend to change my study habits…I think that I will have more time and it will work out better next semester. I depend on my intellect to get me by.

Student B  I’m graduating next semester, if I weren’t I would keep the same study habits.

Student C  I will coordinate classes so that they fit together better so that I’m not so stretched for time. Time and content coordination.

Student D  Once I figured out my study mode, I stuck with that approach. The change came in the second semester. I still study more than others. I feel if I study well enough then I have the confidence to go into the test. Confidence makes you read the questions differently.

Student E  No…I’ve been doing pretty well.

Student F  I have told myself, no matter what the class is I am going to do OK in it.

Student G  Yes, because I’ll be going full-time and taking classes on campus. I’m not sure what that means yet.

Student H  Yes, I won’t be at work…I’m going back to work full-time. It is difficult to do both school and work.

Student I  Try to get ahead in the beginning, but something always interrupts my plans.
Student J: No using the same study approach. But I do prefer the F2F classes.

The responses to this question seem similar to the previous question. It may be that question 1 and question 2 of this focus area are not dissimilar enough to elicit discrete responses. One of the students, however, provided some clear evidence of an internal locus of control, “I have told myself, no matter what the class is, I am going to do OK in it.”

Changes in Studying: 3. Have you observed students learning in ways different from your approach?

Student A: Yes, I think I observe others studying together. I don’t know what they do on their own.

Student B: Yes, it seems that everybody studies differently.

Student C: I don’t have much experience watching others learn…some others may have less or more demands on their time. (Note: This student was homeschooled)

Student D: I don’t have to study so hard if I attend the class period. Other students, who don’t show up for class, often have a lot of questions before the test.

Student E: Yes, quite a few people study differently from me….I am not too worked up about it.

Student F: There seems to be some personal things going on in the lives of other students…children, illness working in the evening. I see some not very happy.

Student G: Yes, my girlfriend loves the study groups…it makes her study because she has to meet the group.

Student H: Yes, quiet a few students do OL work at school…some from home.

Student I: Yes, most of the students I study with spend a lot more time going over the textbooks. I read fast and skim.
Student J  The only thing that I can think of is that I think I spend more time on my school work than perhaps other students.

These responses indicate that the students recognize that they may be studying differently from others, and that they have noticed some students working in online courses in the campus library computer lab and in computer classrooms.

**Summary of Phase Two—Qualitative Analysis**

Three themes emerged from the one-on-one interviews. These thematic threads serve as a description of how the successful online learners approach the task of learning in the online environment. The first theme, *Time Demands*, addressed the amount of time investment necessary for the online courses. Students stressed that face-to-face courses required less rigorous reading of the textbooks since the lectures often filled in the understanding gaps. Several students commented on reading the textbook multiple times to ensure an understanding of the content, and use of the Internet as a resource for further explanation.

The second theme, *Commitment*, focused on the need to manage time and the scheduling of the courses. Finding the time to do the extra reading that is required of the online courses was stressed several times. Students indicated that, even though the online courses provided the flexibility of taking the class anywhere at anytime, it was crucial that a time to “go to the online class” be determined and that it be adhered to throughout the semester. Following the syllabus and determining the amount of time needed for the course were also repeated responses relating to sticking to the schedule.

The third theme, *Social Interaction*, reflected the students’ lack of interest in studying with other students and with working in groups. Several students strongly
expressed their dislike of trying to coordinate time to meet online with other students and the delays in responding to each other that result in an asynchronous online class. The following quotes are representative of the three themes that have emerged from the interviews.

Table 8. *Themes emerging from the one-on-one interviews.*

<table>
<thead>
<tr>
<th>1. Time Demands</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Online classes require more preparation time.</td>
<td></td>
</tr>
<tr>
<td>Online does not have the lecture; you have to plan more reading time and research time.</td>
<td></td>
</tr>
<tr>
<td>My online course required hours on end.</td>
<td></td>
</tr>
<tr>
<td>I may read the text several times.</td>
<td></td>
</tr>
<tr>
<td>Online was definitely a change for me; much more time.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>2. Commitment</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>When I register for my classes, I am picking specific times for all of them. If I set a time for a class, I need to follow through. I may have to adjust the time in the first week, but then I keep it.</td>
<td></td>
</tr>
<tr>
<td>Time management is critical; you have to be dedicated, structure certain times of the day or parts of the week and you must do it.</td>
<td></td>
</tr>
<tr>
<td>I do it after work; no other time.</td>
<td></td>
</tr>
<tr>
<td>I set a schedule and stay with the schedule.</td>
<td></td>
</tr>
<tr>
<td>I divide the assignments into parts to be done every single day. I won’t go to bed without doing that work.</td>
<td></td>
</tr>
<tr>
<td>I do the class on the computer at work; I could easily get to the OL class on breaks or lunch.</td>
<td></td>
</tr>
<tr>
<td>I set a schedule or timeframe in which to do the work.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>3. Social Interaction</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>I like to learn on my own, I don’t want to bother with everyone else’s problems.</td>
<td></td>
</tr>
<tr>
<td>I generally don’t study with fellow students. I use my text and the instructor.</td>
<td></td>
</tr>
<tr>
<td>Never…coordination is difficult, and I like my own ideas unless someone is really good at what they are doing.</td>
<td></td>
</tr>
<tr>
<td>I don’t like to study with other students. Most other students are not dependable…rather do it myself.</td>
<td></td>
</tr>
<tr>
<td>No, never. I don’t like it that much…don’t like group work.</td>
<td></td>
</tr>
<tr>
<td>My experience with group projects is average to poor; scheduling conflicts. I’m not looking for a friend out of the class.</td>
<td></td>
</tr>
</tbody>
</table>
Summary

In Phase One it was concluded that the WebCT self-selected sample represented the WebCT population with respect to age, gender, and grade distribution. The WebCT sample was predominately successful internal locus of control online learners. Ten of the students from that sample were interviewed one-on-one and three themes that contain learning tactics were identified. The first theme was *Time Demands*, which spoke to the additional amount of time the students needed to process the course content. The participants generally believed that online courses require more reading and studying time than face-to-face courses. *Commitment*, the second theme, emphasized the need to pick a specific time to attend the online course. The participants scheduled the online courses within the constraints of their other responsibilities and remained committed to the selected schedule. *Social Interaction* was the last theme to emerge. This theme related to the students feelings about working in groups and group projects. Six of the ten participants said that they strongly preferred to work individually and were concerned about how their grades would be impacted by other students’ efforts. In addition, these participants felt that online group work and group projects were more time-consuming and difficult to arrange. In Chapter 5 the implications of these findings and recommendations for further research are presented.
CHAPTER 5

CONCLUSIONS AND RECOMMENDATIONS

Introduction

The purpose of this mixed methods study was two-fold. First, an exploration of the relationship between academic performance and locus of control of fall semester 2004 online learners at MSUCOT was conducted. Next, the unique learning tactics of successful online learners were investigated. The literature supports that students with an internal locus of control have lower attrition and higher performance assessments, are more alert to those aspects of the environment which provide useful information, place value on skill or achievement reinforcements, generally are more concerned with ability and particularly failures, and are resistant to subtle attempts to influence them (Barell, 1995; Cook, 1997; Corbeil, 2003; Lefcourt, 1982; McCombs, 1991; E. Jerry Phares, 1976; Rotter, 1966, 1990; Wolters, 1998). However, it has not been determined if internal locus of control students develop and use unique learning tactics to complete their online coursework. Few locus of control studies have been conducted on online students and still fewer studies have focused on the construct of learning tactics of online students. The questions addressed in this study were:

1. What is the relationship between internal locus of control as measured by Rotter’s Locus of Control instrument and academic success as
measured by academic performance of fall semester 2004 MSUCOT online learners?

2. Do successful online learners utilize unique learning tactics?

Phase One—Quantitative Findings and Conclusions

A WebCT course shell was used to invite the students to participate in the study and to deliver and score the RLOC inventory. A self-selected sample of 122 WebCT online learners from the WebCT population of 600 students at the Montana State University Great Falls College (MSUCOT), participated in this study. There was no statistically significant difference between the WebCT sample and the WebCT population with respect to the variables of gender and age (Chi-Square for sample (n = 122) = 2.647, p = .754), (Chi-Square for population (N = 600), = 2.787, p = .733).

A Wilcoxon test was conducted to evaluate whether there was a statistically significant difference between the medians of the WebCT sample grade distribution and the WebCT population grade distribution. There was no statistically significant difference between the WebCT sample and the WebCT population with respect to grade distribution (Z = -1.35, p = .893).

A Pearson's r test was used to determine the degree of the relationship between student scores on the Rotter’s Locus of Control Inventory and grades in the online courses offered during fall semester 2004. The results were inconclusive due to a lack of variance in the grade data and the RLOC scores (Pearson's r (N = 122) = -.068, p = .454). Eighty-six (85.7) percent of the students with a RLOC score of 6 or less received a grade of “A” or “B” in the online course. There was a lack of preponderance of external locus of control scores and grades of “C”, “D”, and “F” within the sample (see Tables 4 and 5).
in Chapter 4). However, given that the WebCT sample matched the WebCT population on the variables of gender, age, and grade distribution, it was possible that there was a lack of variance in the WebCT population. It appeared that the WebCT sample did represent the WebCT population of the College and that it was possible that online learners at MSUCOT were predominately successful, internal locus of control learners.

**Phase Two—Qualitative Findings and Conclusions**

The second research question was addressed by interviewing 10 students with an RLOC score of 6 or less. The interview questions were grouped into three topics with a total of 10 questions; namely, study approaches (3 questions), study habits (4 questions), and changes in studying (3 questions). Three themes emerged from the interviews—Time Demands, Commitment, and Social Interaction with other students. These themes contained learning tactics that can be shared with future online learners to prepare them for the online environments and to facilitate positive outcome performance. Packaging the tactics in a memorable phrase may make the message more appealing and the tactics more memorable.

**Time Demands = Online Takes More Time**

Most of the interviewees were married or divorced, with children; most of them worked outside the home and many worked 40 or more hours per week while attending the College. Time was a consideration for them. The online course offerings at the College provided the students with the flexibility to schedule school around their families and jobs. However, the interviewees said that the online courses required more reading, more research, and more time than their experience with the on-campus, face-to-face
courses. They consistently remarked that the lectures in the on-campus courses facilitated their reading the course content in the textbooks, that they often had to read the material several times in the online course to understand the content, and that online instructors often expected the student to do time-consuming outside research. These learners budgeted for the extra time necessary to read and re-read the online course material, to research topics, and many of them stated that they worked ahead of the syllabus schedule so that they would not fall behind.

Student advisors and online orientations need to stress the following learning tactics related to time: (1) budget extra time to do online reading, re-reading, and studying (2) budget extra time for research requirements, and (3) work ahead when possible. A common phrase describing this group of tactics will help remind the students of the importance of time—*Online Takes More Time*. The use of this tag line when students appear to be violating these tactics can reinforce their need to re-employ the tactics and perhaps mitigate further problems that the student may be experiencing with their time commitments and responsibilities.

**Commitment = Pick and Stick**

The interviewees repeatedly commented on the need to manage their time, and it appears that setting a fixed schedule for the online course was their solution. For some students the “anytime, anywhere” attraction of online course offerings may have suggested “any way”. However, the interviewees repeatedly stated that it was important to pick a day or time when attention to the online course would be devoted. One student said that he schedules his online courses conveniently around his on-campus courses, actually scheduling the online class in that day and time as though he had to attend the
class even though the online courses were asynchronous. A number of the interviewees stated that they observed students on campus working in their online courses. One of the interviewees stated that she did not have a computer at home, and she completed her online work at her job. Several other interviews stated that they “went to” their online classes at a certain day. Weekends were mentioned several times, but regardless of the day or time, they forced themselves to stick to the schedule that they established.

The flexibility of online education lies in when the student goes to the class, not if the student goes to the class. The online courses may be perceived as having less structure by some students; however, the interviewees suggested that online courses require more structure (less flexibility), but on the part of the student not the course or instructor. The tactics that surfaced from this theme suggest that to be successful online students they needed to (1) schedule the online course around other responsibilities (2) stay committed to the schedule. The tag line for these tactics was *Pick and Stick*.

**Social Interaction = Solo or no Solo**

Six of the students in this study expressed some strong, negative feelings about the group work or group project learning tactic. Though several comments indicated that they felt that it works for some students, six of the ten students interviewed indicated that they preferred to not work in groups. These students expressed some concern that their grade may be impacted by students who may be unwilling to contribute equally to the group project effort and that trying to make connections with the other online group members was time-consuming due to the asynchronous nature of the online methodology. The students did comment that posting responses to discussion questions and asking other students questions were not seen as objectionable, but that generally they preferred to
work alone. Recent publications regarding teaching online have discussed the importance of creating learning communities through collaboration, group projects, and discussions (Collison et al., 2000; Ko & Rossen, 2004; G. S. Moore, Winograd, & Lange, 2001; R. M. Palloff & Pratt, 2005); however, the interviewees in this study expressed some negative comments about required group work in online courses. Bailey (2002) believes colleges must move to the point where student-learning styles are matched with the delivery medium. Blocher and associates found that students enrolled in an online Master’s of Education in Educational Technology degree program would seek help from the instructor when they needed at a higher rate than seeking help from peers. They also found that the students had lower interest in peer collaboration. These results were explained as the “many years of teacher-centered education…where the correct thing to do was to ask the teacher, who was considered the holder of knowledge.” Blocker also observed that “years of teacher-centeredness have marked these learners with the idea of ‘loneliness is better than being in a group’” (Blocker, Sujo de Montes, Willis, & Tucker, 2002 p.10). Interviewees in this study expressed the same help seeking behavior and peer collaboration attitudes. For the students in this study, the instructor was the first source of help, and peer collaboration was seen as negative and unproductive in several students’ comments during the interviews. One student said that it was a waste of time to seek help from people who know as much or less than she did about the topic, and another student described peer collaboration as a “waste of time”. These may be explained by the type and quality of peer collaboration activities that the interviewees have experienced, or it may be a consistent with an internal locus of control perspective to learning. The literature supports the preference of internal locus of control individuals to work
independently, and be in charge of their learning. These behaviors are also consistent with self-directed learners (Knowles, 1980).

Chapter Two of this study related internal locus of control with self-efficacy, self-directed learning, field-independence, and learner autonomy. Using internal locus of control and these related constructs, a student profile of an individual who prefers to control their work product, optimally uses resources, is resistant to manipulation from the outside, is proactive, usually has strong self-concept, and who can provide their own structure for learning activities can be drawn. These learners may resist peer collaboration because they do not perceive a need for it. Educators should recognize different learning styles and provide for activities for diverse learning preferences. It may be possible that adult learners who are married, have children, and who work full-time while going to school, have the necessary skills to collaborate with others and know when that collaboration is in the best interest of their learning. The tag line for this teaching tactic is *Solo or no Solo*.

The learning tactics identified in this study and their associated tag lines could be utilized by advisors to online students and administrators and faculty who develop online orientations. These simple tools help provide students with concrete behaviors that may help increase academic performance online and on-campus. The teaching tactics identified in this study may help online instructors design assignments and activities that take into consideration the learning preferences of all online students.

**Summary**

Because the data collected in Phase One of this study was not sufficiently robust to allow for a statistically validated correlation between locus of control and academic
performance in the WebCT sample, it is recommended that this study be replicated in a similar context and with a sufficiently diverse sample. Based on a preponderance of low locus of control scores on the RLOC inventory and grades of “A” and “B” it appeared that fall 2004 online learners at Montana State University Great Falls College of Technology were predominately successful internal locus of control learners. These students, uniquely positioned in the online environment, have discovered the learning tactics that have helped them become successful. The learning tactics identified in this study could be shared with future online learners by advisors, online orientations, and student support services thus providing the students with the tools for success and allowing them to feel more in control of their learning. Online students armed with the proper tools for success will have a greater probability of having a more positive learning outcome and experience.

Studies have linked the internal locus of control construct with the constructs of self-efficacy, self-directed learning, field-independence and learner autonomy. Research studies have found that learners that possess these characteristics have a greater probability of attaining their goals. It may be possible that the Rotter’s Locus of Control Inventory could predict success in online learners, and that further studies of successful online learners could also reveal other learning tactics. It may also be possible that teaching online learners to plan their learning activities using the framework of goals, strategies, and tactics could improve student conceptualization of the learning activity and provide them with a useful and transferable framework that is already successfully employed in business and military environments.
Implications for Further Research

The following are recommendations for future studies:

1. This study should be replicated with sufficiently large samples in other online populations of graduate and undergraduate online learners to uncover learning tactics in diverse online groups. The self-selecting procedure in this study did not produce sufficiently diverse data.

2. Further investigation into other variables that may have an impact on or a relationship to learning tactics or approaches that online learners employ (i.e. context, psychographics of the community and student population, nature of the courses) is needed. A study done by Storm of Montana State University nontraditional students in 1990, also encountered a preponderance of internal locus of control individuals with above average GPAs (Storm, 1990). A study needs to be done exploring socio-economic, or psychographic factors in Montana that may influence the grades and locus of control variables in this population of learners.

3. Learning tactics should be investigated using other qualitative tools such as observation and case study. The learners in this study may not have been accustomed to reflecting on their learning behaviors and as such their responses may not have been as revealing as direct observation of the students’ learning tactics and behaviors. Students who do not have computers at home often use the computer labs at the College to complete their online work. Video taped observations of online learners in
computer labs may provide valuable information about the approaches and tactics used by students taking online courses.

4. Further exploration of the application of the theoretical framework of “learning tactics” is needed. The use of goals, strategies, and tactics as the framework from which students should be instructed to approach their educational goals needs to be explored. This model has proven to be successful in business and in the military, but the model is not used in education. A study investigating the impact of student success in online courses as a result of using these planning tools would be valuable in advising students in preparing and completing online courses.

5. Future studies need to explore the use of collaborative groups as an online teaching strategy. This teaching strategy may not be attractive to all online learners, and there may be retention implications if students feel that their learning preferences are not recognized.

6. Not all online learners own the necessary tools to be online. This study revealed that some online learners do their coursework on campus or at work, either because they do not own a computer, or because they do not have a high-speed connection to the Internet. Research needs to be done to address the availability of computer labs on campuses for the “on-campus/on-line” learners.
References


APPENDIX A

Rotter’s Locus of Control Inventory and Survey
PLEASE READ THESE INSTRUCTIONS CAREFULLY BEFORE YOU BEGIN.

This is a questionnaire to find out the way in which certain important events in our society affect different people. Each item consists of a pair of alternatives lettered "a" or "b". Please select the one statement of each pair (and only one) which you more strongly believe to be the case as far as you are concerned. Be sure to select the one you actually believe to be more true rather than the one you think you should choose or the one you would like to be true. This is a measure of your personal belief: obviously there are no right or wrong answers.

Please answer these items carefully but do not spend too much time on any one item. Be sure to find an answer to every choice.

In some instances you may discover that you believe both statements or neither one. In such cases, be sure to select the one you more strongly believe to be the case as far as you are concerned. Also try to respond to each item independently when making your choice; do not be influenced by your previous choices.

---

Locus of Control Inventory and Survey

---

Question 1.

a. Children get into trouble because their parents punish them too much
b. The trouble with most children nowadays is that their parents are too easy with them.

Question 2.

a. Many of the unhappy things in people’s lives are partly due to bad luck.
b. People’s misfortunes result from the mistakes they make.

Question 3.

a. One of the major reasons why we have wars is because people don’t take enough interest in politics.
b. There will always be wars, no matter how hard people try to prevent them.

Question 4.

a. In the long run people get the respect they deserve in this world.
b. Unfortunately, an individual’s worth often passes unrecognized no matter how hard he tries.
Question 5.

a. The idea that teachers are unfair to students is nonsense.
b. Most students don’t realize the extent to which their grades are influenced by accidental happenings.

Question 6.

a. Without the right breaks one cannot be an effective leader.
b. Capable people who fail to become leaders have not taken advantage of their opportunities.

Question 7.

a. No matter how hard you try some people just don’t like you.
b. People who can’t get others to like them don’t understand how to get along with others.

Question 8.

a. Heredity plays the major role in determining one’s personality.
b. It is one’s experiences in life which determine what they’re like.

Question 9.

a. I have often found that what is going to happen will happen.
b. Trusting to fate has never turned out as well for me as making a decision to take a definite course of action.

Question 10.

a. In the case of the well prepared student there is rarely if ever such a thing as an unfair test.
b. Many times exam questions tend to be so unrelated to coursework that studying is really useless.
Question 11.

a. Becoming a success is a matter of hard work, luck has little or nothing to do with it.
b. Getting a good job depends mainly on being in the right place at the right time.

Question 12.

a. The average citizen can have an influence in government decisions.
b. This world is run by the few people in power, and there is not much the little guy can do about.

Question 13.

a. When I make plans, I am almost certain that I can make them work.
b. It is not always wise to plan too far ahead because many things turn out to be a matter of good or bad fortune anyhow.

Question 14.

a. There are certain people who are just no good.
b. There is some good in everybody.

Question 15.

a. In my case getting what I want has little or nothing to do with luck.
b. Many times we might just as well decide what to do by flipping a coin.

Question 16.

a. Who gets to be the boss often depends on who was lucky enough to be in the right place first.
b. Getting people to do the right thing depends upon ability, luck has little or nothing to do with it.

Question 17.

a. As far as world affairs are concerned, most of us are the victims of forces we can neither understand, nor control.
b. By taking an active part in political and social affairs the people can control world events.
Question 18.

a. Most people don’t realize the extent to which their lives are controlled by accidental happenings.
b. There really is no such thing as ”luck.”

Question 19.

a. One should always be willing to admit mistakes.
b. It is usually best to cover up one’s mistakes.

Question 20.

a. It is hard to know whether or not a person really likes you.
b. How many friends you have depends upon how nice a person you are.

Question 21.

a. In the long run the bad things that happen to us are balanced by the good ones.
b. Most misfortunes are the result of lack of ability, ignorance, laziness, or all three.

Question 22.

a. With enough effort we can wipe out political corruption.
b. It is difficult for people to have much control over the things politicians do in office.

Question 23.

a. Sometimes I can’t understand how teachers arrive at the grades they give.
b. There is a direct connection between how I study and the grades I get.

Question 24.

a. A good leader expects people to decide for themselves what they should do.
b. A good leader makes it clear to everybody what their jobs are.
Question 25.

a. Many times I feel that I have little influence over the things that happen to me.
b. It is impossible for me to believe that chance or luck plays an important role in my life.

Question 26.

a. People are lonely because they don’t try to be friendly.
b. There’s not much use in trying too hard to please people, if they like you, they like you.

Question 27.

a. There is too much emphasis on athletics in high school.
b. Team sports are an excellent way to build character.

Question 28.

a. What happens to me is my own doing
b. Sometimes I feel that I don’t have enough control over the directions my life is taking.

Question 29.

a. Most of the time I can’t understand why politicians behave the way they do.
b. In the long run the people are responsible for bad government on a national as well as on a local level.

Question 30.

What is your age?

Question 31.

Are you male or female?
Question 32.

Please list the online course(s) that you are taking this semester (Fall 2004).

Question 33.

If you are taking more than one online course during Fall 2004, please identify from which one of those courses you are giving me permission to collect your grade.
APPENDIX B

Invitation to Participate Letter, E-mails, and Postcard
INVITATION TO PARTICIPATE

December 6, 2004

Dear MSU Great Falls College of Technology Online Student:

You are being asked to participate in an important online research study of learning tactics of online learners. Students enrolled in an online course at MSU Great Falls College of Technology during the fall 2004 semester will be invited to participate. The purpose of this study is to investigate if successful online learners use unique "learning tactics" when enrolled in online courses. Identifying those tactics may provide future online learners with tools to facilitate their success.

You will be asked to do the following in Phase I of this two-phase study:

- Take a locus of control inventory or assessment. This is not a test, just an information gathering tool to determine your locus of control. Participants will be given an locus of control inventory score and a brief explanation of the score immediately following the completion of the inventory.
- Provide permission to compare your grade in your online course with the score on the locus of control inventory.
- Provide some information about yourself, such as gender, age, and number of college courses that you have taken

Depending on the results of the analysis of the data from Phase I, you may be asked to participate in Phase II. Participants with a low score on the locus of control inventory and an “A” or “B” grade in the fall 2004 online class will be asked to participate in Phase II.

Phase II will be a face-to-face interview in which you will be asked questions about the “learning tactics” that you utilize in taking the online course you completed fall 2004. The estimated time required to complete Phase I is approximately 20-30 minutes. The estimated time required to complete Phase II, if you are asked to continue in the study, will be approximately one hour.

All of the information collected in this study will be kept confidential, and will only be used in the actual analysis of the data, and/or to contact you to request a follow-up interview.
At no time will your name be published in this study. In Phase I, a comparison of your grade and your locus of control score will be combined and analyzed with other participant’s grades and scores in the study. If you agree to participate in a follow-up interview in Phase II, your name will NOT be used. Only responses to interview questions will be included in the study results. At the conclusion of the study, all documents that tie your name to your locus of control inventory score and grade for the course will be destroyed.

By logging into the “Learning Tactics” course shell at your WebCT login page, by providing your name, MSU College of Technology Banner ID number inside the course, and by completing the locus of control inventory and additional questions, you have given Marilyn Besich, the author of this study, your permission to access your grade for the fall 2004 online course that you have completed, and to compare that grade with the score you receive on the locus of control inventory. These actions represent your voluntary consent to participate in this study. If you complete Phase I of the study, you are not obligated to participate in Phase II. You are also free to withdraw from Phase II if you initially agree to participate in Phase II and later change your mind.

Results of this study will be posted at this course shell by summer 2005.

Faculty and administrators at MSU College of Technology are enthusiastic about the growing number of online course offerings. We are committed to providing the best learning opportunities that we can, and we are supportive of research that brings new understanding to online teaching and learning processes.

Thank you in advance for agreeing to participate in this study.

If you have any questions about the study, contact Marilyn Besich at (406) 771-4376, or e-mail at mbesich@msugf.edu. You may also contact Mark Quinn, Chair of the Institutional Review Board for MSU, at 406-994-4411 or email at mquinn@montana.edu.

Sincerely,

Marilyn Besich
Program Director Business Management/Entrepreneurship
Subject: Learning Tactics Study

Recipient: Marilyn Besich (SP154gf)

Date: Wednesday, January 12, 2005 8:43am

Hello Fall04 Online Students:

Your participation in this important study is critical to the outcome of this project.

This study will not be able to proceed to the analysis phase until 200 of the 600 online students enrolled in a Fall 04 online class have participated. It is necessary that 30% of the total number of online students respond in order to move to the statistical analysis phase.

Thank you so much to the 90 students that have participated by completing the three steps. I appreciate the important contribution that you have made to this study.

Once all the information has been collected from 200 participants, you will be able to see an interpretation of your score.

Watch for the mail message.

Thank you for taking your valuable time to help with this project.

Marilyn Besich
Subject: "Thank You" and "Please"

Message no. 1299
Recipient: Marilyn Besich (SPIT154gf)
Date: Saturday, January 22, 2005 12:36pm

Hello Fall 2004 Online Learners:

Thank you so much to the 92 students who have participated in this study. We nearly have 50% of the number of participants that we will need to proceed.

If you have not completed the 3-step process to be part of this study, PLEASE consider doing so. This study will provide us with information about our learners that will help us improve the design of our online curriculum. Your input is critical to our efforts.

Faculty and developers view our courses from a different perspective than you do.....We need your perspective and data from you to make our online offerings better meet your needs.

As soon as we reach 200 participants, we will proceed to the analysis phase of the study. Results of that analysis will be posted at this shell by Summer 2005. Please help this study progress to the next phase by participating today.

Thank you,

Marilyn Besich
Dear Fall 2004 Online Learners:

I need your help to make online learning better for you. Last December, you were invited to participate in a WebCT online course labeled -- Learning Tactics Study. Only Fall 2004 online learners were asked to complete the 3-step survey process. As of January 26, 98 students have participated.

This study cannot progress until 200 of the 600+ Fall 2004 online students respond to the survey. If you have not participated in this study, please do so by February 11.

If you have already completed the survey, Thank you.

Go to http://webct.montana.edu, enter the username and password that you used last fall semester, and complete the 3-step process of the study.

Thank you—Marilyn Basich, Program Director for Business Management/Entrepreneurship
Subject: Due Feb. 11

Message no. 1928
Recipient: Marilyn Basich (SPIF154gf)
Date: Tuesday, February 8, 2005 10:48am

Dear Fall04 Online Learners:

By now you should have received a "snail-mail" reminder about this study. Results from this study will be used to improve our online offerings.

If you have already participated, Thank you very much.

If you have not yet completed the easy three-step process to join this study, please do so as soon as possible.

February 11 is the projected "end of gathering data" date. However, 200 participants are needed for the study to progress to the analysis phase. Currently there are 115 participants.

Please join in this study, today.

Thank you in advance for your contribution of time and involvement.

Marilyn
DECEMBER 3 E-MAIL MESSAGE TO FACULTY

Marilyn Besich

From: Marilyn Besich
Sent: Friday, December 03, 2004 5:33 PM
To: Jon Nitschke; Karalea Fisher; Sridhar Rajappan; Christine Kowalski; Susan Cooper; Melissa Rajappan; Deborah Newton; Robert Truax; Marilyn Besich; Teri Dwyer; Esther Stinnett; Donna Eakman; Ken Wardinsky; Teresa Blackwood; Jeff Brown; Deborah Morey; Fred Bridger; Colleen Hazen; Patti Gillespie; Stephen Forrest; Terrance Monroe; Susan Brazier-Smith; Mark Plante; Rebecca Johnson; Mike O’Lear; Meredith Connie; Pam Parsons; Tim Paul; Brian Clifton; Kim Schrenk; Mary Fry; Dennis Veleber

Subject: I need your help with a study

Importance: High

Dear Fellow Colleagues:

I am conducting a research project on Learning Tactics. All online students enrolled for Fall 04 will be invited to participate. I am asking for your help to encourage your online students to participate in this study. Please post the brief textblock message below for the next two weeks on your online course homepage encouraging your students to participate. I will need about 250 students to participate in order to proceed with the study.

Next week (hopefully by Tuesday, 12/7) the students will be able to see a new “course”, Learning Tactics Study, when they login to WebCT. There will be instructions, a request to e-mail me their consent to participate, and a 28-question (select “a” or “b”) inventory with 4 very brief survey questions. I have estimated 30 minutes to complete.

This is a particularly busy time in the semester and I am sure that there will be some resistance to participate, but please encourage and remind them about this study. I will allow the students to participate in the study after the semester ends, and depending on my response rate I may have to contact them more than once.

You can expect my eternal gratitude for your assistance.

Here is the message:

Dear Students:

Did you notice a new course, Learning Tactics Study, added to your WebCT login? This is an important study that will gather information that will help us improve our online offerings. Your participation is critical to the success of this study. Please enter the course and follow the instructions. This will only take approximately 30 minutes of your time and you will be making a valuable contribution to this study and our efforts to deliver the best educational offerings that we can. Please participate in the study by December 17. Thank you in advance for your help.

Thank you!!

Marilyn Besich
Program Director, Business Mgmt/Entrepreneurship
MSU Great Falls College of Technology
2100 16th Ave. So.
Great Falls, Montana 59406

mbesich@msuGF.edu

406-771-4376
DECEMBER 10 E-MAIL MESSAGE TO FACULTY

Marilyn Besich

From: Marilyn Besich
Sent: Friday, December 10, 2004 3:27 PM
To: Marilyn Besich; Jon Nitschke; Karalea Fisher; Sridhar Rajappan; Christine Kowalski; Susan Cooper; Melissa Rajappan; Deborah Newton; Robert Truax; Teri Dwyer; Esther Stinnett; Donna Eakman; Ken Wardinsky; Teresa Blackwood; Jeff Brown; Deborah Morey; Fred Bridger; Colleen Hazen; Patti Gillespie; Stephen Forrest; Terrance Monroe; Susan Brazier-Smith; Mark Plante; Rebecca Johnson; Mike O’Lear; Meredith Connie; Pam Persons; Tim Paul; Brian Clifton; Kim Schrenk; Mary Fry; Dennis Veleber

Subject: Second Plea--Learning Tactics Study

Importance: High

Dear Fellow Colleagues:

Last Friday I sent the message below (at the bottom of the page) to you to encourage your online students to participate in the Learning Tactics Study. I asked that you post the textblock below inside your WebCT course. Thank you to all of you who posted the textblock.

I have good news and bad news. The good news: I have 40 participants!! The bad news: I need 250 participants out of our 600+ unduplicated online learners in order to proceed with the study.

If you have not already done so, would you please post the blue textblock in the message below on the homepage of your WebCT online courses. If I don’t have 250 participants by the end of next week, I will have to resort to plan B which I will not bore you with today.

Again, thank you, thank you to all of you that have encouraged your students to participate. And again, please ask your students to join in the study so that I do not have to evoke plan B.

Yours on bended knee,

Marilyn Besich
771-4376
APPENDIX C

Interview Protocol
Learning Tactics Study Interview Protocol

I would like to ask you some questions about your approach to learning. I have three areas of focus, your approach to studying, your study habits, and changes in the way you study.

Studying Approaches

1. When you first enroll in a course, how do you prepare to study?
2. When you take classes with different delivery methods, such as online or hybrid, do you manage your studying differently than a face-to-face class?
3. Has your approach to learning and studying changed since you have been enrolled in this college? Explain.

Study Habits

1. Would you say that you employ study habits in your learning? If yes, can you describe them? If no, can you explain how you study the content in your courses?
2. Explain how time and place influence your learning?
3. Do you seek outside resources to enhance your learning? If yes, describe those resources. If no, explain why outside resources are not needed
4. Do you study with fellow students?

Changes in Studying

1. Have you had to change your approach to studying as a result of taking a particular course? If yes, explain.
2. Do you intend to approach studying differently next semester?
3. Have you observed students learning in ways different from your approach?
APPENDIX D

Letter of Permission and Peer Audit Letter
May 2, 2003

Marilyn A. Besich
3307 Bison Lane
Great Falls, MT 59404

Dear Ms. Besich:

You have my permission to reproduce and use the I-E Scale for your dissertation research, providing you are supervised or consult with someone who is trained in the use and interpretation of personality measures.

Very truly yours,

Julian B. Rotter
Professor of Psychology
April 2, 2005

Marilyn Besich
Department of Business and Technology
Montana State University-Great Falls
2100 16th Avenue South
Great Falls, MT 59405

Dear Ms. Besich:

After a careful review of the qualitative data that you have gathered and the procedures you have used in the course of your research to identify the learning tactics used by successful online learners, I have made the following observations:

1. Your category formation is valid, accurately reflecting your interview transcriptions, observational notes, and documents.

2. Your member checks have provided the opportunity to receive feedback from your informants, adding to the internal validity of your findings.

3. Your triangulation of concepts, feedback, and different methods of data collection have followed acceptable standards for the analysis of qualitative data.

4. As you know, the purpose of qualitative research is not to generalize but to describe and interpret, and you have accurately represented your data’s limited generalizability.

5. Finally, you have accurately portrayed the limitations on replicating your study.

In my professional opinion, your research meets and exceeds all the requirements of properly conducted qualitative research. I wish you well in your study.

Sincerely yours,

Dr. E. L. Kittredge
TRACE Project Director