

CHAPTER III

METHOD

Introduction

The purpose of this chapter is to describe the research process used in the study including the selection of study participants, the data collection method and procedures, and a description of the study instruments and data analysis procedures. The guiding questions for this study are: a) Is Goal Accomplishment Style, as measured by the Goal Orientation Index (GOI) related to persistence and dropout in an online, computer-conferenced class? b) Is there a relationship between other selected variables (Demographic, Personal, Institutional and Participative) and student dropout and persistence in an online, computer-conferenced environment? and, c) Can a relationship between Goal Accomplishment Style and the other selected student variables be identified and related to persistence and dropout in an online, computer-conferenced class?

Using logistic regressions, this study investigated the relationship between specified variables and the dichotomous dependent variable, i.e., whether a student persists in or drops out of an online, computer-conferenced class. The purpose of the qualitative interviews was to provide insights not available through quantitative research.

Kember (1990) refers to dropout and persistence studies as a “complex phenomenon influenced by a multitude of variables” and Cookson (1990) writes that dropout in distance education is multi-causal. This study acknowledges the complexity of the dropout problem. The purpose of this study is to add to the dropout literature for online classes, to help build a foundation on which future dropout and persistence research might be based.

Selection of the Classes and Study Participants

The students registered in 20 online classes self-selected into each class. Each student had an equal chance of participating in the study. The 20 courses are typical online, computer-conferenced, undergraduate course offerings at the university. For purposes of this study, online courses are defined as computer-conferenced courses that are offered entirely at a distance without any face to face meetings. All interaction, whether student to instructor or student to student, was conducted via the computer. NOTE: connectivity for the 20 courses used in this study is based on client-server technology. (Reference Chapter 1, p. 19 for a definition of client-server technology.) In the year since this study was proposed, conducted and defended, the institution has developed online courses for delivery via the Web.

The 20 courses were selected for inclusion in this study either because they represented each of the specialization programs offered at the university in the online format or because they were taught by the most experienced online instructors. For the summer 1998 semester, there were 52 courses offered in the online, computer-conferenced format using client-server technology. The course specializations used in this study were: Computer Applications (CAPP), Communications (COMM), Behavioral Studies (BEHS), Humanities (HUMN), Information System Management (IFSM), Management (MGMT), Technology and Management (TMGT), Mathematics (MATH), and Computer Management Systems (CMIS) (see Table 4). Multiple courses for the COMM specialization were included in the study because these courses frequently have lower enrollments in the summer semester. Including multiple courses for this specialization should guarantee a representative number of study participants.

Table 4
Twenty Courses Used in the Study

BEHS343	Parenting Today
BEHS363	Human Sexuality
CAPP 340	Computer Applications
CMIS370	Data Communications
CMIS 435	Computer Networking
CMIS445	Distributed Systems
COMM 390	Writing for Managers
COMM393	Technical Writing
HUMN301	World Views in the Humanities
IFSM201	Introduction to Computing
IFSM 300	Computers for Managers
MATH 107	Selected Topics in College Algebra
MGMT300	Leadership in the Age of Diversity
TMGT310	Problem Solving
TMGT322	Principles of Marketing
TMGT350	Organizational Development
TMGT360	Human Resources Management
TMGT 430	Project Management

Each of the 20 courses was specifically designed for delivery at a distance by a team made up of an instructional designer, editor, course developer, peer reviewer and content expert. At the university, the course developer and peer reviewer are adjunct faculty members, working practitioners, bringing a wealth of hands-on experience to the course development process. The content expert is usually the academic director, a full-time member at the institution. The instructional designer and editor are also full-time staff at the university. The design process for each of the courses takes approximately 18 months.

The course developer originates the draft of the Course Guide, which contains what Moore refers to as “the academic’s commentary”, e.g., an explanation and illumination of the course text and related readings (Moore, 1973). At the university, the Course Guides are small books, between 150 –180 pages in length, in which the course developer presents the course materials, incorporating his practical knowledge with

textbook theory. In addition to the Course Guide, the course developer prepares an extended syllabus setting forth the course goals and objectives, assigned readings and assignment due dates. The instructional designer works closely with the course developer to structure all of the material in the most optimum fashion. The Course Guide and the syllabus drafts are reviewed by the peer reviewer, then by the content expert and last by the editor. The process is labor-intensive but necessary to more fully support the distance-learner.

The completed course is then turned over to the individual faculty to use in teaching the course. The syllabus, Course Guide and related materials are mailed to each student at the beginning of each semester. The syllabus is also posted online in the online classroom. Over the course of the semester, the instructors develop dialogs in their online conferences, making illustrative points about the course content and asking students to construct and comment on the subject matter by responding on the online conference. The dialogs that develop are based on a wide variety of sources which include the course text, Course Guide readings, outside readings and of course, the students' actual experience. Each faculty member is expected to have the necessary conferencing skills to "weave" the online discourse throughout the semester.

The number of participants varied for each of the 20 classes included in this study. The maximum number of students who may register for an online class at the university is capped at 35 students per class. The Communications classes (COMM) have a maximum capacity of 20 because of the heavy writing assignments required of students. Three sections of the COMM 390 course are included in this study so that a representative sample of COMM students will be part of this study.

Study Instruments

The study instruments used in this research included the Pre- and Post-Course Surveys, the Goal Orientation Index, and the Participant Summary Sheet. Each instrument is

discussed in the following section. The instrument discussion is presented within the context of the variables collected by each of these instruments. Table 5 shows the Data Collection Source e.g, survey instrument, for each variable.

Table 5
Study Variables and Data Collection Source

Variable	Data Collection Source	Question Number
Age (D)	Pre-Course Survey	11
Gender (D)	Pre-Course Survey	10
Ethnic Identity (D)	Pre-Course Survey	12
First Online Class (PE)	Pre-Course Survey	2
Reason for Taking Class (PE)	Pre-Course Survey	3
Reason for Online (PE)	Pre-Course Survey	4
Computer Expertise (PE)	Pre-Course Survey	5
Final Grade (PE)	Participant Summary Sheet	
GPA (PE)	Student Records	
Specialization (PE)	Pre-Course Survey	1
Initial Experience with SW (IN)	Pre-Course Survey	6
Login & Password (IN)	Pre-Course Survey	7
Course Material Quality (IN)	Pre-Course Survey	9
Software/Tech Support (IN)	Pre-Course Survey	8
Overall Difficulty	Post-Course Survey	2
Assignment Load	Post-Course Survey	3
Assignment Timeliness (PA)	Participant Summary Sheet	
Course Participation (PA)	Participant Summary Sheet	
Course Interactivity(PA)	Post-Course Survey	1
Course Satisfaction (PA)	Post-Course Survey	4
Take another course (PA)	Post-Course Survey	5
Recommend format (PA)	Post-Course Survey	6
Final Grade	Participant Summary Sheet	
Acting Score	GOI	
Planning Score	GOI	
Reflecting Score	GOI	

Variables used in the study included specific demographic (D) variables such as the student’s gender, age and ethnic identity. Personal (PE) student variables included the student’s reason for taking the course, as well as the student’s perceived level of confidence in using technology and their perceived technical expertise. Other personal

variables included the student's GPA, specialization, and whether or not this was the first online class. The demographic (D) and personal (PE) variables were collected on the Pre-Course Survey. NOTE: the ethnic identity question on the Pre-Course Survey was optional. Students could elect not to respond to this question. The format for this question was taken directly from other survey instruments in use at the university.

The Institutional (IN) variables, as measured in terms of student perception, included whether or not the institution's logistical support was sufficient. Students were also asked to rate the quality level of the course material and the level of technical support provided by the institution and whether or not they received their logins and passwords in a timely manner, e.g., within 5 days of registration.

Participation (PA) variables, defined as the level of student's participation in the online class as defined by the faculty member, include the timeliness of assignment submission and the level of course participation. These 2 variables are measured by each faculty member and reported on the Participant Summary Sheet, along with the student's final grade for the class. In addition, participation variables included each student's perception of course interactivity, course difficulty, and assignment difficulty level. These participation variables were determined by student responses to the Post-Course Survey.

Pre-Course Survey - The Pre-Course questionnaire is a 13-item survey designed to capture the demographic data, background information and disposition of the students, including their level of technical expertise, and reasons for taking the online class. The types of responses include personal responses on a Likert-type response scale. The survey was pre-tested for textual clarity on 38 students in a traditional, face-to-face class at the institution. Feedback from the pre-test session was incorporated into the survey design.

Goal Orientation Index - The conative capacity of the participating students was measured using the Goal Orientation Index (GOI). The GOI is a 96-item Likert-type

instrument that provides information concerning a student’s “goal accomplishment style.” The GOI assesses the relative strengths and weaknesses across 12 subcategories of goal oriented behavior. The relative strength of each category is determined within the conation cycle. (See Table 6) (Atman, 1986; Davis, 1995).

Table 6
Twelve Subcategories of Conation Cycle Adapted from Atman 1982, p.5.

CONATION CYCLE	DESCRIPTION
Subcategories	An individual who scores high in this category is one who:
1) Recognize need, problem understand challenge opportunity	is aware of and can detect, interpret, and environmental changes;
2) Set goals	can decide what to do and respond to meet a need, challenge or opportunity;
3) Brainstorm alternatives	generates alternative ways to achieve goals;
4) Assess risks	weighs relevant factors and probabilities of alternatives before acting;
5) Select strategy	can decide among alternatives how to do something;
6) GYAIG (Get Your Act In Gear	can visualize the accomplished goal and sense the pride of goal accomplishment
7) Organize	makes comprehensive plans for short and long term project, keeps track of resources;
8) Make it happen	is action-oriented, immersed in “doing” the project, makes changes if needed;
9) Push On	is task-oriented, does not procrastinate, sticks to the job until completed;
10) Wrap it up	completes the task and meets deadlines
11) Ooo & Ah!	rigorously critiques and evaluates work, rewards self for accomplishment;
12) Purpose, long range direction.	understands long range planning, makes conscious use of talents.

The 12 subcategories of the Conation Cycle can be grouped into three main categories, Acting, Planning and Reflecting (see Table 7). Each of these subcategories was measured as an individual variable in the initial variance analysis. According to Atman's Norms Profile (N = 1116), American adults scored highest in the acting category (mean of approximately 125); less strong in the planning category (mean of approximately 120); and least strong in the reflecting category (mean of approximately 106). Reliability coefficients across the twelve subcategories ranged from .789 to .941 (Atman, 1988. p.4).

Table 7
Conation Cycle Main Categories, Davis 1995, p. 35

ACTING:

- 5) Select strategy
- 8) Make it happen
- 9) Push on
- 10) Wrap it up

PLANNING:

- 1) Recognize need, problem, challenge opportunity
- 2) Set goal
- 7) Organize
- 12) Purpose, long range direction

REFLECTING:

- 3) Brainstorm alternatives
- 4) Assess risks
- 6) GYAIG
- 11) Ooh & Ah!

Post-Course Survey – The Post-Course Survey instrument is a short, 6-item instrument designed to capture a student's impression of his or her experience in the online classroom. Students were asked to respond to the survey questions using Likert-type responses. The survey was designed to measure the student's overall experience in the online class for the semester. This instrument was also pre-tested for textual clarity on 38 students in a traditional, face-to-face class at the institution. Feedback from this

face-to-face session was incorporated into the instrument design.

Participant Summary Sheet - The Participant Summary Sheet is a brief, 3-item report on which faculty rate each student's 1) timeliness in submitting assignments, 2) participation in the online classroom, and 3) final course grade.

Data Collection Procedures

The major data collection procedures for this study included the following steps: (a) conduct Pre- and Post-Course surveys with students in twenty online classes; (b) request students in the twenty courses complete a standardized Goal Orientation Index instrument; and (c) ask instructors to complete the Participant Summary Sheet. Each of these procedures is discussed in detail in the following paragraphs, as are the auxiliary processes and associated forms that are part of the data collection procedures. There are processes for the instructors as well as for students that must be completed prior to the start of the semester. The individual processes are discussed below. Table 8 presents a timetable of study events.

Table 8
Study Event Timetable

Timeframe:	Event:
1) Pre-course registration period (One week prior to semester start)	1a) Instructor Information Packet mailed 1b) Student Introductory Packet mailed (1 st mailing to new students)
2) Late registration period (End of second week of semester)	Student Introductory Packet mailed (2 nd mailing to new students)
3) Fourth week of class	Second mailing of Student Introductory packets to non-respondents.
4) Eleventh week of class	1)Participant Summary Sheet is mailed to instructors. 2)Post-course survey mailed to students
5) Twelfth week – class ends.	1) Follow-up telephone calls are made to non-respondents. 2) Qualitative interviews commence.

Instructor Information Packet – Just prior to the beginning of the semester, the course instructors were sent an information packet explaining the study’s purpose, requesting instructor assistance, and explaining exactly what they as faculty can do to assist the study. In addition, the packet included a topic note that each instructor was asked to post within the online conference. Each faculty member was also asked to post the topic to the conference advising students that participation in the study is strictly voluntary and that their responses, should they decide to participate, are strictly confidential. A copy of the instructor letter is in Appendix B; the topic note text is in Appendix C.

One of the selected variables, timely submission of assignments, was measured and determined by each faculty member for each study participant and reported at the end of the course. The instructions, set forth in the Instructor Information Packet, had to be sufficiently explicit to ensure faculty could follow instructions from the very outset of the semester. This purpose for including explicit instructions was to promote conformity in variable measurement. For example, various instructors have different types of assignments due at different times during the semester. Some faculty require three page analysis papers every week; other faculty specify that small coded programs be submitted twice during the semester. Still other faculty ask for two major papers from students during the semester. (All of the examples mentioned above are standard course assignments.) The faculty should understand clearly that the assignment type and actual due dates in relation to other instructor’s assignment type and due dates are of little consequence to the overall study design. What is important is that each faculty could determine whether or not the student assignment submission was timely for their particular course. In addition, a follow-up telephone call was made to each instructor to further explain the letter and to answer any additional questions the faculty member may have had.

Student Introductory Packet - A letter of introduction and explanation was sent to

each student along with the Pre-Course Survey and a Goal Orientation Index (GOI) form and a participant release form just prior to the start of the semester. (Please see Appendix D for a copy of the Student Introductory letter and Appendix E for the Pre-Course Survey). A self-addressed stamped envelope was included to encourage compliance and to increase the response rate. In addition, students were sent a Human Subjects Permission Form. All 216 respondents signed and returned the Human Subjects Form.

There were 2 mailings of the Student Introductory Packet. The first was assembled and mailed just after the end of the registration period. The second mailing was sent just after the close of final registration.

The student introductory letter stipulated that study participation is strictly voluntary, that the students would not be penalized in any way if they elected not to participate, and that all survey responses are strictly confidential. The participant release form summarized the study process and provided a place for the student to sign the release form, which signified each student's understanding of the study conditions. No survey data were included in the study without a signed consent form.

Each participant was assigned a research number that was used to associate the data collected from study instruments and the survey results. The research numbers were assigned as each packet was assembled and related according to the specialization (class) the student was taking. For example, all communication (COMM) students were assigned numbers in the 100 series, all mathematics (MATH) students were assigned numbers in the 200 range, etc. All responses and data collected from the telephone inquiries, the GOI, and the in-depth interviews were held confidential. As the participant's completed instruments were received, the student's GPA was obtained from their student records and recorded in the SPSS database.

Participant Summary Sheet - One week before the end of class, the instructors were

sent a Participant Summary Sheet that listed study participants for their specific class (see Appendix F for a copy of the Participant Summary Sheet). Instructors were requested to provide the following information for each participant: whether or not the participant submitted assignments on a timely basis, the degree to which the student participated in the online conference, and the student's final grade for the course. A stamped, self-addressed envelope was also enclosed for the instructor's convenience and ease in returning the Participant Summary Sheet.

As discussed earlier, faculty received instructions regarding the assessment of each student's timely submission of assignments in the initial Instructor Information Packet. This measurement was an ongoing process throughout the semester. However, the letter accompanying the Participant Summary Sheet (sent at the end of the semester) included specific directions for completing the summary sheet for each student as a reminder for faculty.

Post-Course Survey - During the last week of the semester, a follow-up questionnaire (see Appendix G) was sent to each participant along with a self-addressed stamped envelope. The purpose of the Post-Course survey was to obtain the student's perceived satisfaction rating of the class and to document each student's perception of their total class experience. As correlations to rating their satisfaction level with the course, the students were asked whether or not they would take another online class and whether or not they would recommend an online class.

Data Analysis Procedures

As the completed pre-course questionnaires and GOI Scantron™ sheets were received from the participants, the data were entered into the SPSS database, associated by the unique research number. (Please reference the Student Introductory Packet section for a discussion regarding research number assignment.) Once the completed GOI was received and evaluated, these data were also entered into the SPSS database. After the

GOI scores had been evaluated, each student's GPA was recorded in the database. The online courses proceeded according to the individual course syllabus.

During the final week of class, each instructor was asked to submit the Participant Summary Sheet, in which the instructor summarized the timeliness of each student's assignment submission, provided a rating of each student's level of interactivity on the online conference, and recorded the final course grade. The assignment submission summary information was captured in a rating scale that included the following categories: all received on time, most received on time, some received on time. The summary does not reflect the actual number of assignments because the number and type of assignments differ for each class. According to pre-course instructions given to faculty, student course participation is included in this assignment completion summary. The course participation question asked whether or not a student participated in the conference and if so, to what extent. The faculty responses were captured using a Likert-type question to measure the amount of the student's interaction. Lastly, the instructors were asked to record the student's actual grade for the class.

Quantitative Analysis - Once all of the data had been entered into the SPSS database, Pearson correlations (r values) were calculated for all pairs of the independent variables. As specified in the initial study design, the first regression model was to have been based upon an inter-correlation matrix that determined all possible pairs of correlated variables, comparing each variable with every other variable. The initial proposal specified that in cases where one variable was highly correlated with another variable or variables, e.g., the individual r values approached 1 or -1 , these variables might be combined to achieve a parsimonious data set, and the regression rerun. Using this design, the computer program was to have determined and specified the best predictors, then the second best predictors, and so on, until all of the variables had been evaluated.

Once the initial logistic regression analysis was completed, a second analysis was to have been conducted, in which the order of the independent variables to be included in the equation would be specified by the researcher. Specifying the independent variables allows the researcher to minimize the effects of the higher-priority variables to be assessed first, and removed before the effects of lower-priority variables are assessed.

These analyses could not be conducted as initially proposed. This issue will be discussed in detail in the next chapter. Instead, the data for each of the variable categories, e.g., demographic (DE), personal (PE), institutional (IN), or participative (PA) were used in logistic regressions to determine the strength of the relationship between each category of variables and the dependent variable, e.g., dropout /persistence. Next, a logistic regression was conducted specifying the three GOI category data as independent variables to determine their relationship to persistence/dropout. The logistic models conducted yielded regression coefficients (beta-weights), predicted values in relation to the dichotomous dependent variable, and rated the variable significance.

Qualitative Interviews

In the week following the end of class, the students selected for qualitative interviews were contacted. (See Appendix H for a copy of the “probes” used in the qualitative interviews.) The purpose of the probes was to lightly structure the interviews, providing a framework and consistency during each interview, but not stifling any tangential discussions that occurred.

The students interviewed were selected from the list of online course dropouts for the summer 1998 semester. The initial design specified that at least three of the interviewees were to have been participants who had responded to the pre-course survey, who had submitted the GOI, and who had submitted the post-course survey, i.e.,

course persisters. The other 3 students to be interviewed were to have stopped-out from the class, either responding to the first instruments and then not participating in the class in any way or not responding to any of the questionnaires and not participating in the class to any extent. But because such an overwhelming number of survey respondents were persisters, only students who dropped out of their online class were contacted for in-depth, qualitative interviews. In the event a selected student did not wish to be interviewed, the next dropout student on the class roster was contacted in turn.

The goal of the qualitative interviews was to further investigate the student's perceptions of goal orientation and their online experience. The qualitative interviews allowed the students to reflect on their computer-conferenced course experience, adding depth to the data collection effort. Students had the opportunity during the qualitative analysis phase of the study to express in their own words, their experiences in the online environment and to explain in some detail the circumstances affecting their decision to dropout of their online class.

The purpose of the interviews was to probe and explore the student's rationale for deciding to drop out of their respective classes and to garner insights into the student's dropout decision. The qualitative interviews were designed to add depth to the study results and provide recommendations for future studies.

Qualitative Analysis - The transcriptions that resulted from the qualitative interviews were read at least three times. The first review was a "cold" read, one without any preconceptions or expectations on the part of the reviewer. The goal of the initial review was to identify broad themes and concepts about each student's experience in their online class.

The second review refined, perhaps, even redefined the themes identified during the initial review. It is during the second reading that major analysis took place. Wolcott

(1994) uses such terms as “controlled” “methodical” “objective” and “systematic to describe the analysis process that are used during the second reading. Key words and phrases were highlighted.

Interpretation of the material was the goal of the third review. Interpretation, more insightful than analysis, offers the analyst more opportunity to develop what Wolcott (1994) refers to as insightful commentary on the data (p. 36). Interpretation sheds more insight and understanding of the themes identified in the analysis phase. The result of the qualitative interviews was a narrative describing deeper insight into the experiences of students in online classes.

Summary

Chapter III defined the study methodology. This chapter included a discussion of the selection of the participants, the data collection procedures, the study instruments and the data analysis procedures for both the quantitative and qualitative portions of the study. Chapter IV presents the analysis of the study data. Chapter V contains the discussion of study findings and recommendations for future research.