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Factors that contribute to the progress of high school students in a college distance education course

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FACTORS THAT CONTRIBUTE TO THE PROGRESS OF HIGH SCHOOL
STUDENTS IN A COLLEGE DISTANCE EDUCATION COURSE

By

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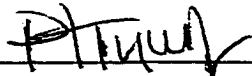
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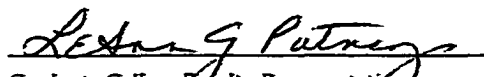

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ABSTRACT

Factors That Contribute to the Progress of Low-Achieving High School Students in a College Distance Education Course

by

Joni Flowers

Dr. Neal Strudler and Dr. David Heflich,
Educational Computing and Technology
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This dissertation examined the factors that contributed to the high school students' progress in a college-level, distance education course. Four high school students, two seniors and two juniors, were selected to participate in the study. They were simultaneously enrolled in high school and the college, distance education course. The researcher in the study was also the instructor. Her lectures were presented to the students via prerecorded videotapes. The college course involved the use of three distance education technologies: video-based instruction, email, and the World Wide Web.

A qualitative methodology using a multiple case study design was used in this study. The students were observed in two settings, the high school and the college campus. Data were collected for 15 weeks from January 1999 to May 1999 from multiple sources including field notes, classroom observations, student interviews, email

messages, student test scores, and attendance records. A cross-case analysis identified several themes that were common across the four individual cases.

Factors such as instructor support, facilitator support, and college support were factors that contributed to the students' ability to complete the course. In addition, the use of video instruction offered flexibility, which enabled the students to pace their learning. Insufficient access to technology in the high school setting, outside influences such as employment, parenting, and social commitments, length of video lectures, and inconsistent course materials were factors that negatively contributed the students' progress. In addition, various instructional strategies were identified for educators to use with high school students enrolled in courses that incorporate video-based instruction.

TABLE OF CONTENTS

ABSTRACT	iii
LIST OF TABLES	vii
LIST OF FIGURES	viii
ACKNOWLEDGMENTS	ix
CHAPTER I INTRODUCTION	1
Need for Study	4
Conceptual Framework	5
Research Questions	13
Significance of Study	14
Delimitations	15
CHAPTER II REVIEW OF THE LITERATURE	17
At-Risk Students and Learner Characteristics	18
Motivation	25
Distance Education	32
Distance Education and Learner Characteristics	44
Distance Education and High School Students	52
Distance Education and Learning Environment	57
Summary	66
CHAPTER III METHODOLOGY	70
Participant Setting Boundaries	71
Data Collection	78
Data Analysis	83
CHAPTER IV RESULTS	89
Global Analysis	91
Student One: CHRIS	104
Student Two: MARVIN	129
Student Three: VIVICA	152
Student Four: DELL	170
Cross-Case Analysis	182

Summary	213
CHAPTER V DISCUSSION	215
Part 1: Discussion of Results	215
Part 2: Implications for College Educators Involved in Enrolling At-Risk High School Students in College Courses	239
Part 3: Limitations of the Study	247
Part 4: Recommendations for Future Research	250
Epilogue	251
BIBLIOGRAPHY	253
APPENDICES	272
Interview Question Guide	273
Questionnaire Student Information Sheet	276
High School Students Test Scores	277
Class Scores and Rankings	278
Categories from Theoretical Framework And Researcher's Interpretation	279
Letters to Participants	282
Clark County School District and Graduate College Proposal	288
Definitions	295
VITA	297

LIST OF TABLES

Table 1	Researcher's Conceptual Framework	8
Table 3	High School Student Demographics	72
Table 4.1	Researcher's Expansion of Conceptual Framework	184
Table 4.2	High School Student Profile/Learner Characteristics	187
Table 4.3	Total Absences in Distance Education Course	188
Table 4.4	Outside Influences	194
Table 4.5	Advantages and Disadvantages of Distance Education	205
Table 4.6	High School Students' Test Scores	210
Table 4.7	Positive Factors Contributing Students' Progress	211
Table 4.8	Negative Factors Contributing to Students' Progress	212
Table 5	College Distance Education Class vs High School Classroom	223

LIST OF FIGURES

Figure 4.1	High School, Distance Education Classroom	95
Figure 4.2	High School Computer Lab	97
Figure 4.3	Community College Computer Lab	101
Figure 4.4	Community College Electronic Classroom	102
Figure 4.5	Factors Contributing to Learner Progress	105

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CHAPTER I

INTRODUCTION

Distance education has become a major teaching and learning tool for high school junior and senior students enrolled in both college preparation and basic skills courses (Delaware-Chenango Board, 1989; Oxford, Park-Oh, & Ito, 1993; Martin & Rainey, 1993). In particular, recent studies indicate that low achieving high school students experience success in distance education courses designed to increase basic remedial skills such as reading, math, and writing (Delaware-Chenango Board, 1989; Murray & Heil, 1997; Speth, Poggio, & Glassnapp, 1991). Speth, Poggio, and Glassnapp (1991) and Delaware-Chenango Board (1989) found that low-achieving students obtain a satisfactory experience in learning basic academic skills courses through distance education.

Distance education offers certain intrinsic characteristics that are attractive to the low-achieving student. It exposes students to technologies and a variety of hands-on learning activities (Paulsen, 1995; Holmberg, 1986; Evans, 1994; Willis, 1994), may provide both individualized and small group instruction (Holmberg, 1977), offers access to courses that may not be available in the traditional school setting (Oxford, Park-Oh, & Ito, 1993; Martin & Rainey, 1993), may allow students to learn at their own pace

(Boston, 1990; Holmberg, 1986), and permits teachers and students to communicate without anxiety (Paulsen, 1995). Research also indicates that studying at a distance can be as effective as traditional instruction when the method and technologies used are appropriate to the instructional tasks, when there is student-centered instruction, and when there is timely teacher-to-student feedback (Moore & Thompson, 1990; Verduin & Clark 1991; Dillon, Gunawardena, & Parker, 1992).

Several specific factors have been identified that are related to the academic performance of low achieving students in the traditional classroom (Ogbu, 1978; Lehr & Harris, 1988; McWhirter, 1993; Phlegar & Rose, 1988; Legters & McDill, 1994; Natriello, 1984) and low achieving students in the distance education classroom (Dille & Mezack, 1991). However, conflicting results have been noted from studies of factors that contributed to the progress of low achieving students enrolled in distance education courses (Cookson, 1989; Dille & Mezack, 1991; Willis, 1993). Furthermore, most of these studies have focused on basic skills rather than on studying how low achievers approach learning in academically challenging learning environments such as college preparation courses (Baker & Sansone, 1990; Bryson & Scardamalia, 1991; Wehlage, et al., 1989). How do particular factors contribute to low achieving students' success and/or failure in an advanced academic course?

To address how certain factors contributed to the progress of low-achieving high school students in a college course, a qualitative methodology was elected using a multiple-case design. The study focused on four high school students, two juniors and two seniors, who were expelled from high school and enrolled in an alternative high

school for credit deficient students. The study consisted of systematic data collection over a 15-week semester. The students were selected to enroll in the three-credit, college distance education course called, *Research on the Internet*. Initially, there were a total of 45 students enrolled in the college course. Observations were made of how the students experienced learning in a college course while they were enrolled in high school and examined how certain factors supported or constrained their progress.

As a college instructor, I had spent two years, 1996-1998, working with high school students enrolled in an alternative high school for credit-deficient students. During that period, five high school students were selected each semester (Fall and Spring) to enroll in my distance education course. Of the 27 students who participated during that time, 23 (90%) of the high school students completed the distance education course with a grade C or above. Several of the students transitioned into the community college and enrolled in other college courses, some of which were via distance education. In addition, three students enrolled in four-year universities.

My respect for the students combined with high educational expectations were factors that contributed to their ability to complete the course. Furthermore, the academic support system which included the high school computer instructor and the college computer lab, created a learning environment that provided opportunities for the students to learn. Tuyay, Jennings, and Dixon (1995) state that effective learning opportunities enable students to make connections between his or her prior knowledge and new information.

Need for the Study

Research has not demonstrated that all low achieving high school students lack motivation and self-discipline, or proven that they cannot perform well in higher-level, academic courses (Means, Chelemer, & Knapp, 1994; Foster, 1989; McCombs & Pope, 1994), nor do I expect that it will because students do not learn the same way in every subject or learning situation (Dunn, 1979; Guild, 1994; Ramirez & Castenada, 1974; Witkin, Goodenough, Moore, & Cox, 1978). Further, the premise that low achievers cannot be taught advanced academic skills is not supported in the literature (Foster, 1989; Means, Chelemer, & Knapps, 1994; Wehlage, Rutter, & Turnbaugh, 1987). Therefore, it is possible for low-achieving high school students to perform well in a college level, distance education course.

Educational research has shown that certain factors do contribute to low-achieving student's failure in the basic skills, traditional classrooms (Lehr & Harris, 1988; Ogbu, 1978) and distance education classrooms (Delaware-Chenango Board, 1989; Dille & Mezack, 1991). Yet, studies are needed to identify how and which factors contribute to the success of secondary low-achieving students in a college preparation distance education course.

Although much research has been conducted to further understand how learning takes place in distance education environments for high-achieving high school students, studies exploring the learning experiences of low-achieving high school students in distance education courses remain virtually unexplored. Furthermore, minimal research has examined how specific factors contribute to the success of low achieving high school

students in distance education college preparation courses. Yet, it is possible that distance education may be a viable alternative as an intervention to help students to transition into college.

Based on the research of Delaware-Chenango Board (1989) and Dille and Mezack (1991), low-achieving high school students do experience satisfaction in basic skills distance education courses. Yet, there is little research to explain why low-achieving high school students succeed or fail in college distance education courses and how specific factors contribute to their academic performance. Williams, Eiserman, and Quinn (1988) indicate that there are few credible studies and little data about high school distance education programs. Cookson (1989) notes that, “with the dramatic proliferation of distance education projects, many questions regarding how students learn have been raised” (p. 38). The purpose of this study was to identify certain factors that contributed to low-achieving high school students’ progress in a college distance education course and using a conceptual framework to explain how certain factors may influence their progress is presented in the next section.

Conceptual Framework

Kember’s (1990) Model of Student Progress and Drop-Out was used to provide a theoretical foundation for this study. The model was designed to identify interventions that may reduce student drop-out from a distance education course. The framework included components such as background characteristics, motivation, learning environment, and the home environment. Kember (1990) concludes that these factors will

influence the students progress and their decision to either complete or drop out of the distance education course. In previous studies, qualitative and quantitative methodologies were applied to Kember's (1990) model to determine which factors contributed to student attrition in distance education (Kember and Harper, 1987; Kember, Murphy, & Siaw, 1991). A qualitative methodology was used in the present study to determine how certain factors influenced the progress of high school students enrolled in a college distance education course.

Table 1 outlines the conceptual framework for this study. An "X" distinguishes which factors are addressed by each researcher. The first column identifies the factors that contribute to students' progress in a distance education course examined in this study. The second column identifies the factors included in Kember's (1990) conceptual framework. The third column demonstrates how the researcher expanded upon Kember's model. Other researchers used to further expand the framework along with additional factors, are identified in the columns four through six.

Background Factors

Kember (1990) states that certain background characteristics such as individual, family, home, work, and previous educational experiences are important variables to consider when trying to understand how and why students succeed or drop out in distance education. However, researchers (Donmoyer & Kos, 1990; Lehr & Harris, 1988; Ogbu, 1978) identified self-confidence, self-esteem, and absenteeism as other learner characteristics that may also influence a student's progress in school. These factors in combination with those of Kember's (1990) served as background factors for this study.

Motivation

Kember (1990) asserts that intrinsic motivation will most likely increase if the students perceive the course to have direct relevance to their individual interests or situation in life. Reglin (1993) states that low achievers are intrinsically motivated when they participate in learning activities that are fun, interesting, and relevant. Brophy (1998) outlines several principles that can be employed to maximize the intrinsic motivation of low achievers, such as create a supportive environment; help students to recognize linkages between effort and outcome; offer rewards for good performance; provide immediate feedback to student responses; and communicate desirable expectations and attributions about students' motivation to learn.

Kember (1990) argues that by themselves, distance education programs have little influence over a student's extrinsic motivation. External motivation must come from an exterior reward system. Some suggest that money may be the only external motivation (Reglin, 1993). The high school students in this study were rewarded with their first three college credit hours, which represented an extrinsic motivator.

Learning Environment

Kember (1990) defines the learning environment as including all of the elements used to make the distance education course available to the students such as access to technology, and course materials. He states that if the students cannot effectively integrate into the learning environment, they will drop out of the course. Factors such as a

Table 1
 Researcher's Conceptual Framework

Conceptual Framework: Factors Contributing to Students' Progress	Kember (1990)	Researcher's Expansion of Conceptual Framework	Nieto (1996)	Hodgson (1986)	Tuyay, Jennings, & Dixon (1995); Collins & Green (1992)
Background Factors - Learner Characteristics Individual Family Work Previous Educational Experiences	X				
Absenteeism		X			
Self-Confidence		X			
Self-Esteem		X			
Learning Environment	X				
High School Atmosphere		X	X		
Access to Technology		X	X		
Distance Education Course	X				
Course Materials				X	
Academic Support	X				
Instructor Support (Expectations)	X				X
Family Support	X				
Facilitator	X				
Home environment Family Work Social Commitments	X				
Babysitting Siblings		X			

Conceptual Framework: Factors Contributing to Students' Progress	Kember (1990)	Researcher's Expansion of Conceptual Framework	Nieto (1996)	Hodgson (1986)	Tuyay, Jennings, & Dixon (1995); Collins & Green (1992)
Peer Pressure		X			
Classroom Culture		X			X
Student Motivation	X				

high school atmosphere, course scheduling, and access to technology are also aspects of a learning environment concerned with high school students. Nieto (1996) maintains that student progress is influenced by the school structure or physical environment and includes factors such as access to technology, school setting, and educational policies and practices. She further concludes that these factors may affect student learning in negative ways.

Distance Education Course

Kember (1990) indicates that the students' ability to integrate into the learning environment depends on how the course is offered or made available to them; however, he did not emphasize the importance of course design. Hodgson (1986) asserts that "the interrelationship between the support system of a distance education course and the course materials is not only important, but can be very influential upon the students' approaches to learning" (p.301). Holmberg (1990) states that instructors should use course materials that are characterized by a conversation style and are highly readable, handle assignments quickly, and make assignments that require students to solve problems or make decisions.

A growing body of research identifies teacher behaviors and instructional strategies that make a difference in student achievement (Brophy, 1998; Brophy & Good, 1986; McCombs, 1988). Moore and Kearsley (1996) assert that the single most important skill that all distance educators must develop is to make their students active participants in their educational program. Further, they conclude that it is not too difficult to present

information over a distance, but getting people to participate and making learning active at a distance is much harder.

Academic Support

The academic support component of the conceptual framework represents the human element that interacts with students to help them understand course material. The support system include the roles of facilitator, instructor, home, and student support. Kember (1990) states that effective manipulation of these variables will integrate students into the academic environment. He further asserts that human contact, through instructor/facilitator support (telecommunications or face-to-face), is the most important method of building student-institute affiliations.

Home Environment

Kember's (1990) concept of the home environment was also expanded. He states that factors in the home environment such as family, work, and social commitments may have an influence over the progress of distance education students. However, the high school students in this study may not be faced with the same issues as the adult learners. Therefore, Kember's framework was expanded to include variables such as caring for younger siblings, family obligations and support, and peer pressure as factors that may influence the high school student's progress in the college distance education course.

Classroom Culture

Although Kember (1990) states that students must be able to interact with the learning environment, he did not indicate how social interaction in the distance education course may influence the students' progress. Classroom culture is of particular

significance in exploring the way students interact in a high school environment. Tuyay, Jennings, and Dixon (1995) state that the combination of teacher, facilitator, student interaction and collaboration will allow for a variety of opportunities wide enough to provide students with many opportunities to learn, and opportunities that will work for each student in their own way. They further conclude that providing such opportunities for learning also helps students construct knowledge through their own learning experiences. Harasim, Hiltz, Teles, and Turoff (1995) claim that the intensive interaction in the distance education class offers many opportunities for building an online class community and to provide positive feedback for students, thereby increasing their self-image and confidence in the academic classroom (Delaware-Chenango Board, 1989).

Collins and Green (1990) state that the norms and expectations that the instructor establishes for the classroom will affect the academic achievement of students who are comfortable with the norms and expectations of their traditional classroom environment. Furthermore, the student's inability to adapt to the culture or the norms and expectations of the social group in the classroom will have an affect on student progress. Kember (1990) also states that students will have difficulty learning if the student has a different perception of a task or conception of knowledge, to the instructor.

Collins and Green (1992) also claim that the social structure of the classroom and the roles and relationships that students develop in the classroom influences what opportunities students have to learn, how the opportunities will be accomplished, and what results from participating alone and in groups in everyday events. Viewed in this

way, participating in events does not equate with learning, but only forms a potential conditioning for learning.

Research Questions

This study was guided by the following research questions:

1. What factors in the educational setting may support or constrain student progress in a distance education course?
2. What is the relationship of the learning environment, including the learning space, access to technology, home and institutional policies to a student's progress in a distance education course?
3. What is the relationship of the content and methods of the course to a student's progress in a distance education course?
4. What is the relationship of the academic support systems, including classroom assistance, assistance at home, and the role of the instructor to a student's progress in a distance education course?
5. What is the relationship of classroom culture, including student interactions with the instructor, with each other, and the role of listserv discussions to a student's progress in a distance education course?
6. What influence do individual learner characteristics have on a student's progress in a distance education course?

Significance of Study

The question addressing why some students achieve through distance education and others do not is becoming increasingly important as distance education moves from a marginal to an integral role in the post-secondary education. This study attempted to answer the question by identifying certain factors which influenced high school students' progress in a college course that incorporated video-based instruction.

The findings in this study add to distance education research by providing information related to the factors which contributed to the progress of high school students enrolled in a college course that incorporated distance education. This information may help educators develop other interventions to ensure student success in college courses that incorporate distance education. In addition, the research may help educators to understand how teacher expectations influence student performance and what instructional strategies can be employed to support student progress, especially among low achieving high school students.

Furthermore, understanding which factors contribute to low achieving high school students' success or failure in distance education courses may improve distance education programs, may create a learning environment which promotes teacher and student interaction, may increase teacher expectations of low achievers, may expand student thinking and learning strategies (Riddle, 1992), and may increase the number of advanced academic courses offered to low achieving high school students (Means, Chelemer, & Knapp, 1993).

The study also provided useful information for the instructional design of college courses that teach advanced academic skills to limited performing high school students. Lastly, this study identified the tools or technologies with the greatest potential to impact students' abilities to succeed in a college course that utilized video-based instruction.

Delimitations

This study was designed as an exploratory study to identify factors that contributed to the progress of low achieving high school students enrolled in a college distance education course. By design, it focused on one college distance education course, four high school students, and was limited to a single high school. Therefore, research findings cannot be generalized to all populations.

Theoretical Assumptions

“Qualitative research is the collection and analysis of extensive narrative data used to gain insights into a situation of interest not possible using other types of research and to promote greater understanding of not just the way things are, but also why” (Gay, 1996, p. 208). Qualitative data are collected in a setting where and as the variables being studied naturally occur (Gay, 1996). Qualitative methods were used in this study to identify which and how certain factors contribute to academic success or failure of low-achieving high school students in a college level distance education course. The research assumes that the information gathered portrays an accurate reflection of actual practice and will answer the research questions.

Organization of Dissertation

This chapter provides an overview of this dissertation. Chapter II provides a review of the literature highlighting key studies which support the framework for this study. Chapter III discusses the qualitative methodology, multiple case-study design, with a description of the setting and participants. Chapter IV, includes the four individual case studies and examine the factors that influenced the students' progress in the college distance education course. The chapter concludes with a cross-case analysis which compares and contrasts the four individual cases and identifies common themes among them. Chapter V presents the findings, implications, and suggestions for future research. Definitions for terms used in the study can be found in Appendix G.

CHAPTER II

REVIEW OF THE LITERATURE

The purpose of this study was to investigate which factors contribute to the success or failure of low-achieving high school students in a college distance education course. Kember's (1990) Drop Out Model suggests that several variables such as learner characteristics, goal attainment, and academic and family support, will influence student success or failure in distant education programs. However, the researcher has expanded Kember's model to include other factors that may influence student progress in the distance education course. Thus, to establish a context for this inquiry, a literature review addressing the components of Kember's (1990) Drop Out Model and other factors identified by the researcher will be presented to support the framework for this study.

The first section identifies learner characteristics and other factors that influence the academic performance of low achieving high school students. This is followed by a review of the literature on motivation. The third section of the literature review presents the history of distance education and how distance education technologies are currently being used to deliver courses to adult learners, high-achieving high school students, and low-achieving high school students. Few studies address student approaches to learning

or factors that influence the progress of low-achieving students, which indicates a gap in distance education research.

The last section presents a summary of the review of the literature and outline the relationship of the researcher's conceptual framework as it relates to Kember's (1990) Drop Out Model. Research indicates that certain factors that influence students' progress will change and develop over time as a result of their experiences in a distance education course. However, several components of the distance education program must be implemented in order for the students to successfully complete the course. These components are outlined and supported with research.

Learner Characteristics

Family Characteristics and At-Risk Students

Traditionally, at-risk students have been defined in terms of their personal and family characteristics (Donmoyer & Kos, 1993; Lehr, 1988; Natriello, McDill, & Pallas, 1990). These students come disproportionately from poor families and from ethnic and linguistic minority backgrounds (Means, Chelemer, Knapp, 1991; Wells, 1990), low socioeconomic status, a single parent in the home, and low educational attainment by one or both parents (Legters & McDill; Rossi, 1994; Ogbu, 1978). In analyzing high school data, Ekstrom, et al. (1987) found a significant correlation between single-parent homes and dropout rates for whites and Hispanics (but not for blacks).

In a comparison to the characteristics of children rated as "high risk" and "at-risk" based on teachers' evaluations, Larson (1989) found that there is no significant relation

between family “intactness” and degree of risk of educational failure. In a study of young people from low-income black homes with varying family structures, Clark (1983) found that the parents of high academic achievers set firm but not harsh rules, seek information about their children’s academic progress, enhance literacy skills through activities such as reading and word games, and model an optimistic, assertive approach to life. The findings of Clark’s study suggest that the two-parent and single-parent families that possessed the above attributes produced higher achieving students, while the two-parent and single-parent families who lacked these characteristics produced less successful students.

Individual Characteristics

Higbee (1985) defines at-risk or high risk students as students who lack requisite skills as determined by standard measures such as admissions tests and/or high school GPA. Utah (1988) states that any student who, because of his or her individual needs, requires some kind intervention in order to achieve literacy, graduate, and be prepared for transition from school to post-school options, are identified as an at-risk student. Furthermore, students may be at-risk if their learning environment fails to provide them with substantial academic preparation, and equitable access to a successful educational experience (Bryson & Scardamalia, 1991). Trueba (1988) reports that many studies provide examples of students who may be categorized by all of the previously mentioned conditions, yet still be quite successful in school. Further, these students who are classified as being at risk in certain educational situations can be quite successful when classroom, school characteristics, and teachers’ expectations of students change.

Environmental Characteristics

At-risk students underachieve because their basic needs for food, shelter, health care, and safety are unmet (Ogbu, 1978; Rossi, 1994; Utah, 1988). McWhirter (1993) reports that environmental factors, such as poverty is highly correlated with school failure. Reglin (1993) states that the first priority of low socioeconomic parents is to overcome the struggle for survival, and the education of their children may be a distant second.

Cultural differences and language barriers are also factors of low academic achievement among ethnic minorities (Gandara, 1993). Ogbu (1978) concludes that ethnic minorities, for example, develop patterns of low academic achievement because of biases in the social structure and in employment opportunities. Further, some children with low social status may see little reason to exert effort in the classroom because they do not believe their efforts will increase their advances for upward mobility.

Learner Characteristics - Low Achievers

This study defines low-achieving high school students as those with limited academic achievement and are characterized as having low school grades, low SAT scores, poor computational and literacy skills, high absenteeism (Donmoyer & Kos, 1993; Wells, 1990), and are inclined to drop out of school in large numbers unless they participate in precollege programs that help improve deficiencies and increase understanding of the academic culture (Lehr, 1988; McWhirter, 1993). Phlegar and Rose (1988) reported that low achieving students have low basic skills test performance resulting in scores significantly below peers or a consistently low set of scores on valid

tests; poor grades in basic skills or across all subject areas; and below grade level performance.

Scores from state and national testing programs suggest that the kind of skill instruction stressed in most programs for low-achieving students has had some positive effects on student scores on basic skill measures in the early years of elementary school, but there have not been comparable gains on measures of more advanced skills (Phiegar & Rose, 1988). In fact, the majority of limited achieving students appear to fall further behind their more academically achieving peers as they progress in school and a greater emphasis is placed on advanced skills of analysis, interpretation, and problem solving.

Low Achievement: Factors

Researchers increasingly conceptualize poor educational performance as the outcome of disengagement that may begin as early as a child's entry into school (Finn, 1989; Kelly, 1989; Natriello, 1984). According to this model, students who do not identify with, participate in, and succeed in school activities become increasingly at-risk of academic failure.

Thomas (1979) identifies learned helplessness as a factor that affects the academic performance of low-achieving students. Mann and Sabatino (1985) state that the student is likely to attribute the outcomes of learning to circumstances beyond personal control, either internal, "I'm just too dumb so why bother trying," or external, "The teacher is unfair so why should I try." (p.223). As a result, the student may be unwilling to learn better ways of solving problems because of this learned helplessness.

Research on students grouped by ability indicates that while a small advantage accrues to students assigned to the high groups, students assigned to the low groups suffer a great disadvantage in terms of time spent in the activity, interaction patterns, and affective and social factors (Hiebert, 1983; Page, 1989; Slavin, 1990). Current research indicates that ability grouping as a practice whose effects on students in low-ability groups is not only negative, but hinders the progress of students (Hiebert, 1983). Cohen (1979) asserts that arranging groups with mixed social status or groups with dominant social status can also affect the academic performance of low achievers. She further concludes that the low status student is affected not only by his or her own low general expectations for competence, but by low competence expectations from classmates in the group.

Collins and Green (1992) state that the student's inability to adapt to the culture or the norms and expectations of the social group in the classroom will have an effect on student progress. They further conclude that the social structure is a factor that influences what opportunities students have to learn, how the opportunities will be accomplished, and what results from participating alone and in groups in everyday events.

Academic Environment

Research seems to suggest that it is the lack of equal access to education in the school's curriculum, an uncaring school culture, limited instructional programs, and poor teaching and resources that contribute to the lack of academic achievement of low achieving students, which also prevents them from learning advanced academic skills (Foster, 1989; Gay, 1988; Means, Chelemer, & Knapps, 1991; McWhirter, 1993.). Nieto

(1996) for example, maintains that student progress is influenced by structural factors such as the school organization, educational policies, and practices. She further concludes that these structures may affect student learning in negative ways. Classroom studies document the fact that disadvantaged students are expected to do less in the basic skill areas and that they actually receive less instruction on the advanced academic skills than do more advantaged students, and their curriculum is less challenging and more repetitive (Allington, McGall, & Franzen, 1989; Good & Weinstein, 1986; Means, Chelemer, & Knapp, 1991; Oakes, 1986). Because of this, students have little enthusiasm for such curriculum and over time become passive learners in the schooling process, doing little but what they are required to do.

The barriers that affect college enrollment and academic success of low achieving students isolated three major problems in the academic preparation of junior and senior high school students (Apodaca, 1990):

1. Many students have difficulty with algebra/geometry series required for admission to the college as well as with preparatory courses necessary to enroll in these classes.
2. Students have insufficient preparation for science and English course work and lacked the academic background required to undertake college preparatory courses in these disciplines.
3. There is also a need for increased parental and student awareness regarding the nature of and the opportunities available for education.

Taken together, these factors contributed greatly to the disproportionately low rates of college eligibility for low achieving students.

Resnick, Bill, Lesgold, and Leer (1991) report that most efforts to improve educational outcomes for low-achieving students has been based on the premise that what such students need is higher self-expectations for learning coupled with intensified and careful application of instructional methods. Finn (1989), Kelly (1989) and Natriello (1984) suggest that to improve student achievement, the schools must encourage student involvement in academic and extracurricular activities by stimulating students' interest, increasing remedial skill deficiencies, and rewarding their efforts.

The effects of the different expectations and aspirations that educators hold for various populations of young people can also affect their educational progress from remedial to critical thinking skills development (Foster, 1989; McCombs, 1994). Foster (1989) states that educators at increasingly early stages in students' education tend to view students as either high or low achievers or as either college-bound or non-college bound material.

Rist (1970) conducted a study that analyzed teacher expectations of student academic achievement. Based on observations, he concluded that the teacher made an evaluative judgement of the expected capacities of the children to perform academic tasks based on their social class. Rist (1970) also found that the teacher ascribed high status to a certain group of children within the class who fit her perception of the criteria necessary to be among the achievers; those children who appeared not to possess the criteria for essential success were ascribed low achievers and described as failures by the teacher.

Research indicates that if the pattern of low-achieving students' achievement is not reversed, it may develop into a self-fulfilling prophecy that could include school failure (Donmoyer & Kos, 1993; Foster, 1989; Lehr & Harris, 1988 ; Ogbu, 1978; Rist, 1970). By reconceptualizing what is taught to low-achieving students, and how it is taught, schools stand a better chance of engaging students from poverty, minority backgrounds, and limited academic achievement, in an education that will be of use to students in their lives.

Summary

The findings reported above indicate that there are many factors affecting the achievement of low-achieving students in the classroom. Yet, research documents that each classroom, student, and learning situation is different. Rist (1970) states that the success of an educational institution and any individual teacher should not be measured by the treatment of the high-achieving students, but rather the treatment and expectations of those not achieving. Furthermore, the role of the educator should be to facilitate the increased access to education of disadvantaged student populations and not create or promote self-fulfilling prophecies, which may impede or prevent their educational attainment.

Motivation

Motivation is the willingness to expend a certain amount of effort to achieve a particular goal and is affected by the nature of the learning tasks, the characteristics of the

students, the classroom atmosphere, and the personality and approach of the teacher.

Many research studies have identified characteristics that differentiate students according to their motivation to learn in school, such as: self-concept, values, openness to experience, tolerance of ambiguity, and perception of time (Frymier, 1985). The relevant student motives include: the desire to learn, the need for achievement, and the desire for a reward or for avoidance of a threatened punishment.

Research shows that low achieving students have a natural tendency to be intrinsically motivated to learn when they focus on personal learning goals, when they do not have to fear failure, and when they perceive what they are learning as being personally meaningful and relevant (Clifford, 1984; McCombs, 1994; Nicholls, 1983). However, researchers (Clifford, 1984; Nicholls, 1983; McCombs, 1994) indicate that external factors in motivation, such as lack of social and emotional support from family, can have a negative impact on student achievement.

McCombs (1994) outlines several strategies for motivating low-achieving students, such as creating opportunities for students to express self-determination by encouraging them to take responsibility for their own learning; encouraging students to take academic risks; and by creating a positive climate of social support in which all students are individually and genuinely valued and respected.

Deci and Ryan (1991 cited in Brophy, 1998) believe that social settings promote intrinsic motivation when they satisfy people's needs for autonomy, competence, and relatedness. Meaning, students are inherently motivated to feel connected to others within the setting, to function effectively in it, and to feel a sense of personal initiative while

doing so. When teachers and classroom climates support satisfaction of these needs, students will feel self-determined and intrinsically motivated; when they do not, students will feel controlled and extrinsically motivated.

Brophy (1998) identifies several teaching strategies used to motivate students such as: model interest in learning throughout all teacher interactions with students; communicate desirable expectations and attributions; and minimize performance anxiety; induce curiosity or suspense; make abstract content more personal or familiar; induce students to generate their own motivation to learn by asking them to think about topics or activities in relation to their own interests or preconceptions. He identifies several types of extrinsic motivators which reward students for good performance such as: activity rewards, special privileges; grades, awards, and recognition; material awards (money, prizes, trinkets, consumables); praise and social rewards; and teacher awards (special attention, personalized interaction, opportunities to go places or do things with the teacher).

Brophy (1998) claims that extrinsic rewards are more effective for increasing the intensity of effort than for improving the quality of performance. They also guide learning more effectively when there is a clear goal and a clear strategy to follow than when goals are more ambiguous or when students must discover or invent new strategies rather than merely activate familiar ones. Thus, rewards are better used with routine, specific intentional learning tasks than with incidental learning or discovery tasks, and better with tasks where steady performance or quantity of output is of more concern than creativity, artistry or craftsmanship. Moreover, rewards should be delivered in ways that

provide students with informative feedback and encourage them to appreciate their developing knowledge and skills, not just to think about the rewards. Brophy (1998) concludes that rewards can act as motivators only for those students who believe that they have a chance to get rewards if they put forth reasonable effort.

Motivation - Theories

The study of motivation is an examination of how and why people initiate actions directed toward specific goals and persist in their attempts to reach these goals.

Explanations of motivation include both personal and environmental factors as well as intrinsic and extrinsic sources of motivation. Psychologists studying human behavior have proposed many different theories of motivation, such as behaviorist, humanistic, cognitive, attribution, expectancy x value, and metacognition. Kember's (1990) Drop-Out Model suggests that students must be intrinsically and extrinsically motivated to progress and succeed in a distance education course. Therefore, only the theories that address intrinsic and extrinsic motivation are outlined in this section of the literature review.

According to the behaviorist theory, motivation and learning can be reinforced by managing behavior through extrinsic motivators or external rewards and incentives such as tokens, prizes, or even grades (Deci, 1985; Hulle, 1952; McCombs, 1994; Spence, 1960). Behavioral theorists urge teachers to reinforce students with praise and rewards of various kinds when correct or desired responses occur (Deci, 1985; McCombs, 1994).

The current cognitive theories focus on how the mind structures and organizes experience (Covington, 1985; Dweck, 1991; Eccles, 1983). From this perspective, motivation is based on an individual's learned beliefs about his or her worth, abilities, or

competencies; goals and expectations for success or failure; and the positive or negative feelings that result from evaluative processes (Covington, 1985; Weiner, 1990).

The cognitive view also stresses that human behavior is influenced by the way individuals search for meaning, understanding, competence, and the power of the individual's beliefs and interpretations. (Covington, 1985; Dweck, 1991; Eccles, 1983). Cognitive researchers (Covington, 1985; Dweck, 1991; Eccles, 1983) stress that individuals are motivated when they experience a "cognitive disequilibrium", which results in a desire to find the solution to a problem. Arranging for students to experience personal desire to find information or solutions is an intrinsic form of motivation in which learning occurs for its own sake. One limitation of the cognitive view is that it may not always be possible to induce a sense of disequilibrium in students.

Bandura's (1981) social behaviorist theory suggests several basic sources of motivation: outcomes of our behavior, our sense of self-efficacy, and the active setting of goals. Motivation is seen as the impact of the two forces: (a) the individual's expectation of reaching a goal and (b) the value of that goal to him or her. The social behaviorist perspective emphasizes the importance of external factors in motivation to learn, including social and emotional support from significant occurrences and external rewards and incentives in the environment. Further, social learning views suggest that motivation to reach a goal is the product of our expectations for success and the value of the goal to us (Bandura, 1981). If either is zero, our motivation is zero.

Attribution theory of motivation (Weiner, 1980, 1990) describes how the individual's explanations, justifications, and excuses influence motivation. According to

Weiner (1980), most of the causes to which students attribute their success or failure can be classified along three different dimensions: internal or external, stable or unstable, controllable or uncontrollable.

Studies that led to this theory revealed that low achievers tend to attribute failure to do well in school to lack of ability and therefore assume that there is no point in making greater efforts to succeed. When low achievers are successful they tend to attribute it to luck. High achievers attribute failure to lack of effort and assume they can succeed if they try harder. The greatest problems with motivation arise when students attribute their failures to internal, stable, and uncontrollable causes. This leads to apathy and a resistance to seeking assistance. Eventually, this can lead to "learned helplessness." Thus students are likely to become apathetic and hard to reach and hard to teach if they believe the cause of their failure is due to their own doing (internal), is unlikely to change (stable), and is beyond their control (Weiner, 1990).

Recent theories of motivation are beginning to focus on higher level processes, such as metacognition or the ability to think about one's own thinking and on how we can engage higher levels of self-awareness, or consciousness, in order to control our thinking (McCombs, 1986; Suarez, Mills, & Stewart, 1987). When individuals learn they can operate outside the cognitive or learned system of beliefs, they experience a deep sense of personal control. The focus in this research is on an understanding of the self as agent. Meaning, students are capable of understanding the relationships between their beliefs, their feelings, and their motivation. (Suarez, Mills, & Stewart, 1987).

Motivation - Measurement

Motivation can be inferred from the change in behavior that occurs and an indication of its strength (Petri, 1996) and can be observed in this study by the way students use the distant learning technologies, participate in the video instruction, complete homework assignments, and interact with the instructor and students in the distance education course. Motivation serves as an intervening variable, linking the students to the behavior and provides one possible explanation for the relationship between the stimulus and the response (Petri, 1996). Psychologists describe the temporary nature of motivation by pointing out that motivation is a performance variable (Petri, 1996). When sufficient motivation is present, behavior is performed; when motivation is absent, behavior is absent.

Motivation - Characteristics

Petri (1996) outlines three characteristics of motivation: activation, persistence, and vigor. The activating property of motivation is most easily seen in the production of overt behavior. Persistence refers to the characteristic of behaving in particular ways even when the chances of success are small. Observations of this continued persistence has led many psychologists to regard it as an index of motivation. Vigor of responding to the stimulus is also associated with the presence of motivation.

Summary

In conclusion, the literature review in this section documents research on learner characteristics, factors affecting academic achievement of low-achieving students, and

goal attainment (motivation) which support the researcher's theoretical foundation selected for this study. The researcher's conceptual framework identifies several factors, such as learner characteristics, learning environment, school structure, and classroom culture that are important variables to consider when trying to understand how and why students succeed or fail in distance education. These factors also have a major influence on goal attainment and other components of the conceptual framework which affects students' success or failure in a distance education course.

The findings on low-achieving students and motivation also indicate that the instructor should have high expectations of students and should focus on developing course materials and developing instructional strategies which intrinsically motivates students. Kember (1990) states that the distance education program will have a major influence on a student's intrinsic motivation and will affect the student's ability to transition into the academic and social environment if their learning is not made personally relevant or meaningful.

Distance Education

Distance Education: History

Distance education when defined as an educational transaction between a teacher at one geographic location and a student at another, dates back to nineteenth century correspondence courses (Holmberg, 1986; Moore, 1989a; Watkins, 1991). This distance educational model used the mail to provide learners with educational opportunities that

were otherwise unavailable. Most correspondence study was designed for adults, but a few experimental high school courses were offered in the 1920's (Holmberg, 1986).

Schlosser and Anderson (1994) note that correspondence courses were used "to widen intellectual horizons, as well as to improve and update professional knowledge" (p.4). Vocational instruction in fields such as business and mining safety, and courses leading to academic degrees were available in the United States and abroad (Holmberg, 1986; Rose, 1991; Watkins, 1991). In some instances, learners were geographically isolated and unable to participate in traditional classes. In other cases, work schedules prevented adults from attending formal classes.

Correspondence courses provided learners with a formal structure for pursuing a learning goal. Initially, there were four main components of the instructional system: the student, the teacher, the instructional material, and the (postal) communications/delivery system (Dewal, 1988; Keegan, 1990a). The earliest courses were offered directly by the instructor, but by the late nineteenth century some courses were provided under the auspices of a sponsoring institution (Garrison, 1989; Holmberg, 1989). Teachers designed courses, selected or developed instructional materials and forwarded readings, assignments, and tests to students. Students pursued their studies independently and submitted completed assignments to the instructor. Feedback was provided to the student as the teacher graded and returned assignments and tests. Student-teacher interaction were limited to written correspondence.

As correspondence-based programs proliferated, two organizational approaches to distance education emerged (Holmberg, 1989). In small-scale systems, teachers designed

and developed courses for their personal students. Large-scale systems offered institutionally produced courses to large numbers of students. These courses were frequently designed by several people working as a team. The institution employed course tutors "to comment on students' work and teach in other ways" (Holmberg, 1989, p.5). The tutors were rarely involved in the course design and development.

Both approaches suffered from a variety of problems. Perry (1981) notes that small-scale systems were frequently "private mentors set up primarily to make a profit, with little reason to try to ensure learning" (p.6). Large-scale systems were hindered by faculty disinterest and pedagogical concern about educational quality (Watkins, 1991). Lack of motivation, and other persistence problems affected large and small-scale programs and resulted in high attrition rates (Brindley & Jean-Louis, 1990; Garrison, 1989; Holmberg, 1989).

At the course level, two distinct approaches to design and delivery evolved (Garrison, 1989; Holmberg, 1986; Keegan, 1990a; Leslie, 1987; Moore, 1986). Some distance education programs viewed students as independent, autonomous learners. These programs encouraged participants to set their own learning goals, offered flexibility in course structure and instructional materials, and allowed participants to progress at their own pace. Other programs provided tightly structured courses with prescribed instructional materials and required students to complete assignments and meet other course requirements according to the institution's schedule.

Correspondence courses continued as the main vehicle for distance education through the first half of the twentieth century. Instruction was primarily print-based,

although audiotapes or laboratory kits occasionally supplemented the written materials (Holmberg, 1986). However, new developments in communications technologies, particularly radio and television broadcast, led to the emergence of nonprint-based distance education systems.

In the 1920's and 30s, a number of colleges and universities experimented with the development and production of instructional radio and television programs (Schlosser & Anderson, 1994). By the late 1950's, several universities were offering television courses such as New York University's Sunrise Semester for college credit. These courses used television as a one-way delivery system from teacher to student(s). Some attempts were made to expand this delivery system to include services for primary and elementary school audiences, but most of the instructional television efforts were unsuccessful (Buckland & Dye, 1991; Garrison, 1989).

Projects such as Britain's Open University, however, were able to build successful adult education programs using one-way television and radio coupled with correspondence teaching. The Open university, begun in 1971, was a post-secondary degree-granting institution dedicated to serving distance or independent learners who were unable, or did not want to participate in traditional classes. Courses utilized a multi-media delivery format, combining television or occasionally radio broadcasts with written and other supplementary materials and assignments that were distributed by mail (Garrison, 1989; Holmberg, 1986).

Though the Open University's use of television and radio to mediate instructional communications was credited with reducing participant feelings of isolation (Perry,

1977), students still functioned as independent learners. They did not interact with instructors or tutors, during broadcast sessions. Following the large-scale system model, students received feedback on assignments and tests from tutors who were assigned to the institutionally developed courses (Garrison, 1989; Holmberg, 1986).

But, Open University student support services were not limited to course tutors. Keegan (1990a) pointed to the “rich structure of student support services” (p. 194) as a critical innovation. These services, many of which were optional to the student, included academic program advisors in addition to specific course tutors, regional offices to provide decentralized counseling and support, regional study centers, tutorial study sessions, regular monitoring of student progress, student associations and residential summer schools. Keegan (1990a) also noted David Sewart’s claim that it was the Open University’s “concern for the quality of support in a distance system” (p. 97) that alleviated the student attrition and course completion problems experienced by other institutions.

Contemporary Distance Education

The number and kinds of distance education delivery systems have multiplied drastically. Most technology-based systems use one or more of the following delivery vehicles: one-way video, two-way video, two-way audio, audiographics, electronic mail (e-mail), computer conferencing (Bond, 1987; Bradshaw & Brown, 1989; Milheim, 1989; Romiszowski, 1993; Steele, 1993; Tushner et al., 1994; U. S. Congress, 1989; Williams, Eiserman, & Quinn, 1988), and the World Wide Web (Latchman, Salzman, & Gillett, 1999; Madjidi, Hughes, & Johnson, 1999; Smith & Benscater, 1999; Riedling, 1999).

One-way video allows students to see and hear the instructor, but the instructor cannot see or hear the students. Instruction can be live and provided through the same media as two-way video, or pre-recorded and delivered by broadcast, videotape, videodisk, or other pre-produced multimedia platforms that include a visual channel. Live one-way video can be augmented with two-way audio or computer conferencing to provide students an opportunity to interact with instructors in real time (Bond, 1987; Bradshaw & Brown, 1989; U. S. Congress, 1989).

Two-way video allows the student and teacher to interact in real time. Students can see and hear the teacher, and the teacher can see and hear the student. Two-way video provides live instruction, delivered through fiber optics, telephone lines, coaxial cable, microwave transmission, satellite, or other broadcast technology (Bond, 1987; Bradshaw & Brown, 1989; U.S. Congress, 1989).

Two-way audio provides live, interactive oral communication between students and teachers. It can be delivered through regular telephone service, telephone audiobridge, or radio broadcast. Audiographics provides two-way audio interaction between students and teachers and provides for the transfer of graphic or print material back and forth between the teaching and learning sites. It relies on telephone lines, and electronic blackboard, telefacsimile, slow scan video or compressed video (Bond, 1987; Bradshaw & Brown, 1989; U.S. Congress, 1989).

Computer delivery systems include teleconferencing, Internet, bulletin boards, email, and World Wide Web. Computer teleconferencing allows students and teachers to interact in real time (synchronous mode) by entering and retrieving messages via their

computers and a modem/telephone line connection. Computer bulletin boards provide teachers and students a means to post messages for general consumption in a central location, accessible by computer and modem/telephone. Bulletin board messages are retrieved and read at the user's convenience.

E-mail permits personal communication between two or more people via computer and modem/telephone line. As with bulletin boards, messages are written and read at different times, which represents communicating in asynchronous mode (Milheim, 1989; U. S. Congress, 1989; Boston, 1992). Boston (1992) and Lanzon (1992) found that students seem to express themselves more in the electronic mail environment. Sproull and Kiesler (1993) indicate that people feel more comfortable about talking; are less shy; and they also express more opinions and ideas and vent more emotion in the electronic mail environment. Harasim, Hiltz, Teles, and Turoff (1995) assert that email allows students to communicate with the instructor and students outside normal class hours, increases access to the instructor, and expands opportunities for informal group discussion or social interaction. Furthermore, email may also serve as an extrinsic motivator if students are using it to seek peer approval (Turoff, 1995).

Internet-based instruction using the World Wide Web is emerging as a viable option for colleges and universities offering distance education courses. Colleges are now offering a large number of online learning opportunities, from certificate programs to advanced graduate degrees (Madjidi, Hughes, & Johnson, 1999). Furthermore, faculty developing and implementing distance education courses are becoming aware of the advantages that Internet-based instruction can provide to students over other delivery

options (Barnard, 1992) such as having access to course materials without having to travel to the campus, having access to grades, and having direct access to library resources.

Faculty at the Florida Gulf Coast University (Smith & Benscoter, 1999) offered a Criminal Justice distance education program through the Internet which utilized email, Web pages, listservs, and Web-based bulletin boards. In addition, an Internet tutorial was designed to familiarize students with basic computer skills and Internet usage. The faculty found that the Internet tutorial benefitted the students and other faculty engaged in Internet-based courses. They were able to become familiar with basic tasks necessary to communicate in the course prior to allowing them access to the course content via the World Wide Web.

Withrow (1989) emphasizes that a variety of different systems are available within each of these broad delivery categories, but indicates that the hallmark of most of these systems was their ability to provide live, interactive communication between students and teachers. Romiszowski (1993) classifies new technologies on a broader, two-dimensional framework: synchronous vs. asynchronous communication and one on one (individual) vs. group learning contexts.

Bradshaw and Brown (1989) note that each system differs in the degree to which it simulates a live classroom. They observed that two-way video systems come close to simulating a live classroom, but were the most costly and best used with small or medium sized groups. One-way video with two-way audio resembled traditional instructional television, except that students were able to respond directly to the teacher by radio or

telephone. Most of the national elementary and secondary school distance education providers use this delivery system (Tushnet et al., 1994; U. S. Congress, 1989), and with the addition of a number of teaching assistants to handle incoming student calls, are able to serve large groups. Audiographics allows students and teachers to speak with one another and to send static images back and forth, and computer teleconferencing permits live interchange of written communication. Because of the limited sensory interactions afforded by these two systems, Bradshaw and Brown (1989) suggest that these media are best with small groups of a dozen or so. On the other hand, computer bulletin boards and e-mail can be used by any size group.

The emergence of new delivery systems with interactive capabilities expanded the scope of distance education beyond that of the adult learner pursuing a formal educational goal. Elementary and secondary schools began participating in distance education projects that provided math, science, foreign language and other courses to students—courses that would otherwise be unavailable because certified teachers could not be found locally or student demand did not justify hiring a full-time teacher (Jefferson & Moore, 1990; Williams, Eiserman, & Quinn, 1988; U. S. Congress, 1989). Williams, Eiserman, and Quinn (1989) noted that most states (82%) used distance education primarily to address educational equity between small rural schools and large urban schools. However, they also indicated that many states (44%) also used distance education to enrich the traditional curricula.

Formal federal support for elementary and secondary distance education began with the inclusion of the Star Schools Program as part of the Omnibus Trade Bill and

Competitiveness Act passed by U. S. Congress in 1988 (cited in Jefferson & Moore, 1990; U. S. Congress, 1989). Congress created this program as “a comprehensive Federal effort to develop multistate, multi-institutional K-12 distance education” (U. S. Congress, 1989, p. 135). In 1991, Congress passed the Star Schools Program Assistance Act to provide funding for the support of “improved instruction in mathematics, science, and foreign languages, to underserved populations” (20 U. S. C. 4081) using distance education technologies.

Distance Education: Effects

Distance education is evolving into an efficient method for colleges to provide courses to students in both high schools and rural areas across the U.S. (Blumenstyk, 1994; Holmberg, 1990; Moore, 1993; Willis, 1994). Through the use of distance education, colleges are able to offer a course to a class of only three or four students rather than requiring a maximum enrollment (Blumenstyk, 1994). This delivery method could be extremely beneficial to low achieving at-risk students in this study, who may experience success in learning environments where collaborative instruction is utilized for students to work in small groups.

The advantages of providing instruction via distance education are many. Distance education enables individuals who are unable to access the physical school or college campus to take classes by utilizing a variety of distance technologies to deliver instruction (Crooks, 1990; Maxcy, 1994; Willis, 1994). For example, courses taught by distance education can be provided by broadcast television or at instructional television fixed service (ITFS) sites located nearer to where students live (Barker, Frisbie, &

Patrick, 1989; Keagan, 1988; Willis, 1994). This reduces the amount of travel students must undertake to participate in on-campus courses.

Distance education also eliminates traditional time/space barriers to access, development of new skills in communication different from those developed in traditional classroom environments, and greater independence in pursuit of learning (Lewis, Whitaker, & Julian, 1995). Further, nontraditional students, such as students with limited academic ability, who typically do not take courses or work towards a college diploma, now can be afforded the opportunity to participate in the college setting (Beare, 1989; McCleary & Egan, 1989). Thus, rather than being viewed as an additional stumbling block for the high risk or remedial student, distance education technology can be used to assist these students (Brey, 1988).

Bates (1988) believes that televised instruction is especially useful to students who are struggling, because the visual medium allows them to understand concepts through the use of concrete examples. Distance education benefits at-risk students, because they are highly visual learners to whom high quality graphics have more appeal than black and white teaching materials (Delaware-Chenango Board, 1989). Further, low-achieving students are abstract thinkers who read graphics more readily than type (Delaware-Chenango Board, 1989).

The intensive interaction in the distance education classroom offers many opportunities for positive feedback for students, thereby increasing their self-image and confidence in the academic classroom (Delaware-Chenango Board, 1989). Furthermore, students can't hide their lack of understanding in an interactive classroom, such as

audiographic, because the only means the teacher can command to get feedback is direct questioning. Audiographic instruction is essentially a small group activity requiring oral communications and good interpersonal working relationships, two skills at which low-achieving students are notably deficient (Delaware-Chenango Board, 1989).

Minoli (1996) states that distance education can create a collaborative learning environment that promotes student interaction. He further asserts that students can learn more effectively, because they are given the opportunity to engage in active learning, exploration, share projects with other students, exchange ideas, and share homework.

Harasim and Hiltz (1995) state that collaborative learning changes the whole nature of the teaching-learning process and the teacher-student relationship in an online environment. The educator becomes less an authority figure and more a resource and facilitator for the learning activities of the group.

Sewart (1988) notes that distance education affords students many positives, particularly in terms of freedom to study whatever, whenever, and wherever one chooses. While much of this freedom is a consequence of the learner not being constrained by a classroom setting, Sewart also points to deficiencies that occur in the distance education system because of the absence of peer learners. Specifically, he notes the lack of immediate feedback and clarification that are routinely available in a traditional classroom, and the inability of the distant student to evaluate his own progress against that of his or her classmates. He suggests that a human intermediary is necessary to individualize the distance education experience and provide support to bridge the gaps between the student and teaching or the materials provided by the system (Sewart, 1988).

Distance education also provides a form of assisted instruction (Willis, 1994). In telecourses, which use prerecorded videos, students have the capability of reviewing the lectures as many times as needed (Crooks, 1990). This method of learning may prove to be effective for the low-achievement learners in this study, who may need more time to comprehend course material.

Students choose to participate in distance education rather than traditional instruction for several reasons (Niemic, 1987 cited in Willis, 1994) such as convenience and flexibility, lack of instructional alternatives, and educational mainstream alternative. For secondary students, a distance education class may provide the only means of receiving a particular class or specialized course of study. According to Bradshaw and Brown (1989), an estimated one third of the country's school children get an inadequate education because of limited staff and resources related to small school size and geographic location. Thus, to provide students with the classes they need and desire, many administrators have turned to distance education (Bradshaw & Brown, 1989).

Distance Education and Learner Characteristics

Much research has been conducted to discern how learner characteristics affect learning in the traditional classroom. The models of these studies have been used to lay the groundwork for research concerning the distant student. Elements such as age, maturity, motivation, self-discipline, self-confidence, achievement, (Dille & Mezack, 1992) and learning styles have been identified as characteristics which can impact the learning process of the distant student (Willis, 1994). Aslanian and Brickell's (1988)

qualitative research offers an extensive profile of the distance education student. They found that, in general, the students are married, female, part-time students, employed full time, and paying for their own schooling. In this study, background factors such as individual, family and home, previous learning experiences, self-confidence, and absenteeism were included in the researcher's conceptual framework.

Cernicek and Hahn (1991) surveyed experts in distance education and asked them to rate the importance of selected student variables on the effectiveness of distance delivery versus traditional delivery. The variables included in the survey were: reading level, formal education, gender, age, socioeconomic status, geographic location, computer experience, typing skill, degree of student autonomy, previous distance education experience, and self-motivation. The completed survey identified reading levels, student autonomy and self-motivation variables as being the most important for distance learners to possess.

Some of the best predictors of success in distance education are a student's education level, age and previous experience with distance delivery methods. At the Open University in Britain, students with some university education are more likely to complete their distance education programs than those with no university experience. In another institute, individuals with some prior experience in distance education had a greater likelihood of succeeding in their program of instruction. A third study concludes that older individuals (27 years or older) are more likely to complete distance education courses than younger individuals (Dille & Mezack, 1992; Greenberg, 1981; Lamy & Henri, 1983; Rekkedal, 1983; and Woodley & Parlett, 1983).

Rebel (1987) reports that students with education below the norm of the course population, who voluntarily interact with their peers in face-to-face discussions at local study centers were more likely to complete their distance education program than other individuals from the same population. The study notes that the students utilized every educational resource available to them. In a review of distance education projects, Pentz and Neil (1981) found that group interaction can increase completion rates and student motivation to participate in future programs.

Research identifies three types of learners enrolled in distance education courses: adult, high achievers, and low achievers. Adult learners are characterized as being mature, having high motivation levels and self discipline (Delbecq & Scates, 1989); having an ability to be flexible (Speth, 1991); and are more likely to experience satisfaction in distance education courses (Dille & Mezack, 1992) .

In contrast, those adults who are more likely to drop out tend to prefer a great deal of structure, face-to-face lectures, and the opportunity to interact with the instructor (Dille & Mezack, 1992; Moore, 1994; Speth, 1991); and have lower GPA's (Dille & Mezack 1992).

In the present study, the participants were characterized as being low achievers with GPA's below 2.9, who lack self-discipline, motivation, and self-confidence. They ranged from mixed learning ability, ethnic diversity, and socio-economic background.

High Achieving High School Students

High achieving secondary students are characterized as being self-motivators, and self-disciplined, (Campbell, 1992; Cookson, 1989). Further, many of these students

identified with these characteristics need little direction nor discipline from the teacher; prefer to work independently as compared to working in groups; require little motivation from the teacher; and have GPA's 3.0 or higher (Campbell, 1992; Cookson, 1989; Johnson, 1988). Research indicates that students with these type of characteristics, like the high-achieving adult learner, often experience satisfaction in distance education courses (Brey, 1988; Cookson, 1989; Dille, 1992).

Low Achieving High School Students

Current research in distance education identifies the characteristics of low-achieving students as having low-motivation, self-discipline; have a GPA lower than 2.9 (Delaware-Chenango Board, 1989; Murray & Heil, 1997; Willis, 1994); need visual demonstration of lessons, and like low-achieving adult learners, need more direction and interaction with the instructor (Delaware-Chenango Board, 1989; Willis, 1994). Higbee (1987) indicates that two of the perceptual modalities (James & Gilbraith, 1985) preferred by high risk students are visual learning through pictures, graphs, and/or video, and interactive learning through verbalization with faculty and other students.

Student Motivation

A major premise upon the researcher's conceptual framework which supports Kember's model, is that the motivational process is the critical determinant that forecasts success or failure in the teaching endeavor (Kember, 1990). Holmberg (1985) states that distant education will support student motivation and promote learning pleasure and effectiveness if it is provided in such a way that: (a) students believe that the subject of study is relevant to their individual needs; (b) students are made to feel a sense of rapport

with the distance education institution; (c) access to course content is facilitated; (d) learners are engaged in discussions and decisions; and (e) the program provides or real and simulated communication to and from the learners. In the present study, the students only paid \$25.00 to enroll in the distance education course at the community college. In addition, the students received three college credits upon the completion of the course.

Distant learners, who are separated from their instructors, do not have access to the motivational strategies that instructors normally use, or even the social contacts that are associated with face-to-face learning. As a result, distance learners must find motivation from other sources. For distance learners, motivation appears to be linked to their perceptions of the causes and of success and failure (Gibbs, 1984; Taylor, Morgan, & Gibbs, 1981) and is also connected with participation rates and dropout rates (Dille & Mezack, 1992; Moore & Thompson, 1997; Woodley & Parlett, 1983); with completion rates (Brindley, 1987; Peruniak, 1984); and with achievement rates (Dille & Mezack, 1992; Moore & Thompson, 1997; Rekkedal, 1983).

Ehrman (1990) states that the need for face-to-face interactive discourse may have an affect on the motivation of distance education students to complete their course and participate in other distance education experiences. She concluded that the degree of personal interaction required may be governed by the nature of the distance education course and the individual's learning styles.

Distance education students often experience a feeling of isolation from their institution and other students (Erhman, 1990, Holmberg, 1986; Moore, 1989). Without contact with others, student motivation to continue with their course of study wanes and

their chance of success decreases. Several case studies report that regular contact with an instructor or facilitator strengthens the student's ties with the institution, act as a motivating factor and increase the chance of success (Loretsen, Dirckinck-Holmeld, & Christensen, 1989; Malley, Brown, & Williams, 1976 and Mason, 1990b).

Boshier (1990) claims students will be more motivated to use an electronic-mail system because of the egalitarian nature of the communication. Perceptual cues, such as an individual's dress and demeanor or the location of the instructor which often inhibit discussion in an ordinary classroom, are not present in a computer-mediated communications system. Students also interact with email with more energy and enthusiasm often missing in the traditional classroom (Harasim, Hiltz, Teles, & Turoff, 1995).

In distance education, the novelty effect of the new medium often creates initial enthusiasm for the delivery method (Keller & Suzuki, 1983). But if the instruction is not well designed and does not incorporate motivational activities, then the new method of delivery is often abandoned or ignored. To address the motivational design issues related to distance education Keller (1979, 1983) developed a model of motivational design called ARCS: Attention, Relevance, Confidence, Satisfaction. Each of these four factors contain sub-categories and instructional design strategies which have the potential to stimulate or sustain student motivation in both instructor-led and student-centered learning situations.

Teaching Strategies

A growing body of research identifies teacher behaviors and instructional strategies that motivate students and make a difference in their achievement (Brophy, 1998; Brophy & Good, 1986; McCombs, 1988). For most instructors, teaching at a distance involves the use of different teaching strategies than they use in a conventional classroom to motivate students. Their role as teachers change significantly, especially in the balance between presenting content information and organizing the student's interaction with that information. Moore and Kearsley (1996) state that the single most important skill that all distance educators must develop is to make their students active participants in their educational program. Further, they conclude that it is not too difficult to present information over a distance, but getting people to participate and making learning active at a distance is much harder.

As noted in Linking for Learning (U. S. Congress, 1989 as cited in Willis, 1994), "The critical role of the teacher in the distance education setting makes it imperative that teachers get adequate training not only in the technical aspects of the system, but also in the educational applications of the technology" (p.59). This report contends that training is a critical component of any distance education program and should not be overlooked.

Some specific techniques that may be used in teleconferencing, for example, include asking questions, presenting problems or issues for analysis, asking students to share their experiences, and group discussions or group self-evaluations (Moore & Kearsley, 1996).

Holznagel (1998) suggests that when designing an audioconference course, teachers should adopt an approach that shifts the focus of instruction from the teacher to the students. Students are called upon to be less dependent on the teacher, to work collaboratively with other students, and take a student-centered approach. A student-centered approach is characterized by teachers taking a more facilitative role in instruction, sharing responsibilities for teaching and learning, creating opportunities for active participation and interaction among students, and responding to needs of students.

Stahmer and Green (1992), Willis (1993), and Ostendorf (1989) outline several instructional strategies to be used in video instruction. They include:

1. Limit lectures to 20 minutes.
2. Keep the structure simple and clear.
3. Alternate between instruction and interaction.
4. Include different kinds of student involvement, from watching and reading to writing and talking.
5. Maintain viewer interest with a change of voice, image, and presentation style.

Providing students with a framework or supporting structure is important for making connections and developing associations on which to attach new learning. Willis (1994) suggests that teachers should prepare and distribute content outlines and copies of visual materials; develop a course manual, and use visuals to support student learning.

Teacher effects research finds that student achievement is maximized when teachers incorporate elements such as overviews or advance organizers, review

objectives, outline content, signal transitions between topics, point out main ideas, summarize important points, and review main ideas (Brophy, 1997; Brophy & Good, 1986). When instruction is presented primarily in an audio mode, for example, teachers need to make statements that help students see the structure of the content and connect new information with previously learned information (Willis, 1994).

Moore and Kearsley (1996) state that the choice of techniques will be determined by the delivery media used. However, interactive teaching is really a “mental set” that requires teachers to think about inducing knowledge rather than instilling it, to asking questions rather than giving answers, to focusing on student participation rather than the teacher’s presentation of information.

In the present study, the researcher used a student-centered approach to teaching. Instructional strategies such as incorporating an online class discussion group, and in-class group work were incorporated into the course. The discussion group was used to encourage students to share information, such as interesting sites found on the world wide web or to ask questions.

Distance Education and High School Students

Despite the longevity of distance education in the United States, little of the literature of research pertains to distance education in Kindergarten through twelfth grade (K-12) (Moore, 1989; Russell, 1991; U.S. Congress, 1988; Warriner-Burke, 1990; Williams, Eiserman, and Quinn, 1988). Moore (1989) notes that research addressing K-12 distance education is primarily limited to descriptive demographics, and other

anecdotal information. In addition, most of the distance education literature in the above area is limited to pre computer-based technologies for communication and interaction. Yet, while there are studies that address secondary students taking advance placement courses via distance education to fulfill college acceptance requirements (Willis, 1994), studies addressing low achievers are few.

Cookson (1989) notes that research on distance education learners and learning can be classified into two major categories: (a) the effect of specific distance education delivery systems and (b) student outcomes. Media comparison studies comprised most of the research in the first category and examined the effectiveness of one or more delivery systems on student achievement (Cookson, 1989; Schlosser and Anderson, 1994). Student outcome research tends to address students' reasons for dropping out, examined relationships between student profiles and outcomes, or studied institutional (rather than classroom) factors that affect student outcomes (Cookson, 1989). Studies examining the instructional process, its components, or its effect on student performance are rare (Cookson, 1989). However, it is possible that both categories could be combined to examine how students progress in a distance education course.

Bates and Cowell (1986) in their overview of distance education, suggest that while there has been little systematic evaluation of the educational effectiveness of distance education at the K-12 level, that which has been conducted indicates that students learn as well in distance education programs as they do in regular classroom and that student attitudes toward such programs are generally positive.

Few studies address student outcomes in high school distance education. Research dealing with distance education learners in this setting addressed issues similar to those identified by Cookson (1989): student persistence or attrition, student attitudes, and academic achievement.

Laube (1992) studied a group of Canadian high school distant education students and found that completers tend to study more and planned to continue their education after high school more frequently than did dropouts. He found little difference in the amount of help the two groups got with assignments, or in the number of contacts they made with the distance education instructor or facilitator. While completers are overwhelmingly enthusiastic about their distance education experience, Laube (1992) indicates that some dropouts are positive and some are undecided.

Johnson (1988) also examined high school students' attitudes toward distance education. Based on surveys completed by Iowa high school student participating in interactive satellite instruction, he concludes that students are positive about the distance education courses and teachers—although they prefer traditional classrooms. Those surveyed also thought that the major benefit of satellite courses was the opportunity to study an otherwise unavailable subject, and the satellite courses was easier than regular courses.

Nelson (1985) reports that when students instructed via the Iowa Two-way Interactive Technology (TWIT) system were surveyed regarding their perceptions of the programming, 97% indicated no more problems in the televised classes than in traditional classes; 67% believed they accepted more responsibility for their behavior and learning in

TWIT classes; 97 percent indicated a willingness to enroll in another televised class; and 94 percent believed their level of achievement was as high or higher in televised classes.

Several researchers examine secondary students' academic achievement in distance education. Oxford, Park-Oh, Ito, and Sumrall (1993) studied the effect of student characteristics on academic achievement in a satellite-delivered high school Japanese course. They found that motivation is the most significant factor affecting success in the course, although learning strategy use and a visual learning style also proved to be significant in their regression analysis.

Two media comparison studies examine student achievement in traditional versus satellite-delivered high school courses. Bruning, Landis, Hoggman, and Grosskopf (1993) conducted a three year study comparing year-end achievement test scores for students in a first-year-Japanese distance education course with scores from students in traditional classrooms. Each year, the students from the satellite classroom scored significantly higher than students from the traditional classrooms. However, several issues shade these findings. First, course design was not controlled. Traditional classroom teachers taught according to their own curriculum and course design. Also, even though test items were based on curriculum objectives provided by participating teachers, there is no evidence that this curriculum was equally implemented in all classrooms.

Most researchers based achievement outcomes solely on end-of-year test or course grades. However, Kember and Harper (1987) suggest augmenting these measures with quality of learning indicators, specifically whether students employed a surface or deep approach to learning. A surface approach suggests employing rote-learning

strategies to memorize important information rather than seeking overall meaning. A deep or meaningful approach suggests critically examining arguments and evidence in light of one's pre-existing knowledge to distill meaning and expand knowledge. Deep approaches to learning are believed to facilitate development of critical thinking skills (Anderson & Garrison, 1994). In addition, Kember and Harper (1987) report several studies that link surface learning approaches with persistence failure in distance education, and propose that distance educators employ instructional strategies to support students' use of deep approaches to learning.

Most of the research dealing with distance education learners in the high school setting address issues related to secondary students with moderate or high academic achievement as those identified by the previous studies. Few studies address learning outcomes of high school students with limited academic achievement. Yet, research has found that distance education technology does create an effective intervention for low-achieving students.

Murray and Heil (1997) for example, studied a group of limited achieving students in a secondary school audiographic project, which offers several remedial courses through distance education and found the resulting achievement to be satisfactory.

The Midlands satellite project (Speth, Poggio, & Glassnapp, 1991) found that young students who are low in academic skills are able to learn as well in satellite courses as in conventional Basic English and Reading courses. The report concludes that "there seems little basis for claiming that the satellite instruction puts the unmotivated, lower

skilled student at a particular disadvantage compared to conventional instruction – the patterns of achievement are paralleled” (p.21).

The findings of the Summer Telelearning project suggest that small group activities and team teaching can be extremely helpful in molding appropriate learning behavior of low-achieving students (Delaware-Chenango Board, 1989). Further, the intensive interaction in the audiographic course offered many opportunities for positive feedback for students, thereby increasing their self-image and confidence in the classroom.

Distance Education and the Learning Environment

Computer Mediated Communication

Computer mediated communication between student and instructor is increasingly being utilized to enhance the learning for distance education students (Harasim, Hiltz, Teles, & Turoff, 1995). Online communication networks permitting the use of electronic bulletin boards, email, and listservs, enable students who have access to a computer to communicate their messages to instructors or facilitators (Harasim, Hiltz, Teles, & Turoff, 1995). CMC can increase student contact with their institution, teacher, and peers (Bissell, 1987; Davie & Wells, 1991; Kaye, 1989a; Hiltz, 1988; Henri, 1988). Moreover, Bissell (1987), Davie and Wells (1991) claim that the immediacy of contact and feedback made possible by CMC may lead to higher completion rates for distance learners.

Mason (1990) and Paulsen (1995) state that CMC facilitates group discussions, encourages learner autonomy, and enables frequent feedback. Dede (1990) surveyed

students using CMC and found that students: were able to benefit from teaching; obtained extrinsic motivation from peer approval; and felt that they had more of an equal opportunity to participate in discussions. Schriener (1989) found that computer conferencing appeals to both shy and disadvantaged students. Finally, the medium allows for a permanent record of interaction which can later be used for analysis (Davies, 1988; Davies & Wells, 1991; Kaye, 1989).

Although CMC has great potential for increasing teacher-to-student, student-to-student, and student-to-institution interaction, researchers Carrier and Schofield (1991), Davie and Wells (1991), Harasim (1987), and Naidu (1989-1990) note the following disadvantages: (a) students frequently do not receive sufficient training in the use of technology; (b) student and teacher workload is sometimes increased; time constraints are amplified by a longer communication cycle; weaker writers are more reluctant to participate; and student progress may not be sustained over time.

Course materials

Hodgson (1986) asserts that “the interrelationship between the support systems of a distance education course and the learning materials is not only important, but can be very influential upon the students’ approaches to learning” (p.301). Holmberg (1990) states that instructors should use course materials that are characterized by a conversation style and highly readable, handling assignments quickly, making assignments that require students to solve problems or make decisions; and the instructional media used.

Academic Support

Because distant learners are placed in a situation in which neither classmates nor instructors are present to clarify, discuss, or provide feedback, there is a need to implement a support system that bridges the communication gap between the student and teacher if effective instruction and learning are to take place at a distance (Holmberg, 1981). According to Holmberg (1981), the purposes of providing two-way communication in a distance education system are:

1. To support students' motivation and interests by contact with an encouraging facilitator and counselor,
2. To support and facilitate student learning by having students apply the knowledge and skills acquired; and
3. To assess students' progress in order to provide them with an instrument by means of which they can judge their educational situation and needs and by means of which marks can be awarded.

Dillon, Gunawardena, and Parker (1992) note that there appears to be an increase in the use of more advanced technologies, such as computer networking and fax machines, for providing support services to the distance learner. This method of offering assistance is especially beneficial to those students who cannot travel to the origination site due to time or travel constraints. Holmberg (1985) asserts that the academic support system will also promote learning effectiveness if it is provided in a way creating feelings of rapport between the learner and the distance education academic environment; facilitates access to course content; engages the learner in activities, discussions and

decisions; and caters for helpful real and simulated communication to and from the learner.

In this study, the students were assigned an Internet account by the community college. The Internet access allowed the students to communicate via email. The students also had access to library resources such as VCR's and the instructors video lectures to complete homework assignments. In addition, students had access to the college campus computer labs and all other resources that are available to other college students.

The instructor designed a web page which allowed students to access all of their course assignments using the World Wide Web. The students were able to access the resources from home, the high school computer lab, and the college computer lab. The students also had face-to-face interaction with the facilitator, instructor, and their classmates in the study on a weekly basis. The instructor also incorporated a class listserv for the students to communicate via email with other students who were enrolled in the course.

Feedback

A broad range of academic support services have been identified, which seem to have a positive affect on learner satisfaction. Two services appear repeatedly throughout the research literature, timely student feedback and on-site support. Timely student feedback has been cited as being a critical component of learner support (Delbecq & Scates, 1989). Students who receive timely feedback on their assignments respond more positively to the class than those who must wait for feedback (Delbecq & Scates, 1989). Effective use of reinforcement and timely feedback can be used to eliminate or reduce

student apprehension about a new learning situation (Gagne, Briggs & Wager, 1988; Gagne & Driscoll, 1988).

Keller (1979, 1983) and Keller and Suzuki (1988) note that student satisfaction is directly related to the positive consequences of a student's learning. They state that positive consequences can be reinforced through effective and timely feedback during the learning process. In studies of paper-based correspondent courses, it was noted that there was a relationship between instructor feedback and student attrition (Chacon-Duque, 1985). When feedback on student assignments and questions were reduced from 8.3 to 5.6 days, the student completion rates went from 69% to 91% (Rekkedal, 1983). Wells (1990) suggests a turnaround time of 24 hours in a computer-mediated-communication environment is reasonable.

In the present study, the instructor planned to provide feedback on student assignments approximately two times a day using email and videoconferencing. The facilitator and instructor planned to provide students face-to-face feedback twice a week while students were in the classroom and the computer laboratory.

In a distance education environment, the most critical period is about one third to half way through the course. To assist students through this critical time, Wells (1990) suggests that both instructor and facilitator maintain a high level of feedback on student performance. Distance educators who realize the importance of turn-around time on assignments are making use of the technology to expedite the process. Again, using computers, modems, fax and telephone communication, rapid turn-around of corrections and comments is imperative (Delbecq & Scates, 1989).

On-Site Support

Most secondary school distance education programs have the requirement that a local person be in the receiving classroom with the students. These assistants, called facilitators, coordinators, or teaching partners, proctor exams, monitor activities, coach or mentor students, and conduct local off-air exercises. This position may be filled by a fully qualified teacher, a librarian or and aide.

Many assistants assume more of a coordinator role by ensuring that materials are distributed when needed, that tests are proctored, and that deadlines are met. Others may take on more of a facilitator role and act as a bridge between the students and instructor, keeping informed of student interests and progress, and providing guidance and answering questions as needed (Willis, 1992, p. 28).

The support provided by the receiving-site facilitator has been consistently cited as critical to the effectiveness of a distance education program (McCleary & Egan, 1989; Chute, Balthazar, & Poston, 1988; Moore, 1989a; U.S. Congress, 1989; Willis, 1992) and numerous roles have been proposed for them. Schlosser and Anderson (1994) indicate that the facilitator operates equipment, distributes instructional materials, answers questions, offers encouragement to students, and assists the remote teacher.

In studying student responses to an electronic classroom project, Moore, Burton, and Dodl (1989) found that the role and performance of the facilitator was a major factor in determining the success of the electronic classrooms class. Principals and students alike noted that the facilitator's attitude in the projects was vital in allowing students to get the most value from the programming. Threlkeld (1992) in his case studies of rural

distance education, reinforces the position that the learner support person is critical to the success of distance education programs. Because the on-site facilitators play such a vital role, their importance or contributions should not be diminished in any way. A successful distance education program must be sensitive to the needs of the facilitators and offer support on a continual basis. In the present study, the high school computer instructor was also the on-site facilitator.

Library Access

A key component in distance education is the student's ability to obtain library materials (Willis, 1994). For the learner who may be taking a course at home, access to library resources may be limited. And, although many high school-level distance students have access to their school's library, often the holdings are limited or dated.

This can create problems for the distance learner. As pointed out by Dillon, Gunawardena, and Parker (1992), who conducted an evaluation of learner support:

Library resources are very important to distance students as the majority of them (57.3 percent) indicated that success in the course required access to library materials. The effectiveness of the library services provided seemed to be a significant barrier to distance students who are required to use the library. (p.2)

Home Environment

Kember (1990) states that the student must be able to manage the demands of social, family and work commitments. For example, if family members see the need for study as an important aspect of the students' interest, then they are more likely to support

them in spending time on study activities. If, however, the family perceives family duties as having priority over study time then it will be difficult to integrate periods of study with the family (Evans, 1994; Haile, 1986; Kember, 1989, 1990; Naidu, 1989; Peruniak, 1983; Schwittman, 1982).

The researcher expanded this component of Kember's conceptual framework because he only focused on adult learners. In this study, the participants were high school students. Therefore, the researcher had to consider factors in the home environment such as babysitting siblings, family obligations and peer pressure that may have an influence on students' progress in the course.

Classroom Culture

Kember's (1990) model indicates that students must be able to integrate with all facets of the academic institution, such as the course materials, the interaction via assignments, the tutorial or facilitator assistance provided, and any other interactions between the student, instructor, and the learning environment to successfully complete the course. Furthermore, students with less formal schooling and study are likely to face more problems with academic integration than those who have been academically prepared to transition into college (Kember, 1989).

Kember (1990) indicates that by identifying the factors that influence students' progress before enrollment into a distance education course, the institution can provide assistance, such as tutoring or counseling to help students achieve integration into the academic environment. This is called collective affiliation. However, the researcher expanded Kember's model to examine the factors that contributed to the students'

progress in the classroom. Holmberg (1993) states that interaction with a tutor or a group of fellow students is essential for conceptual development. Kember (1989a) asserts that there should be congruence between the student's approach to study and the instructional design of the course. Factors such as the amount of contact with students, the speed of response or feedback to student-initiated contacts, the provision of tutorials or the use of telephone conferencing can all contribute to whether or not the student has any positive feelings of association with the institution (Kember, 1989a).

Haile (1986) and Naidu (1989, 1990) claim that social and intellectual isolation contribute to the failure of students in distance education. That is, distant learners experience fewer opportunities to interact with course instructors and other students in order to discuss course content, assignments, learning strategies, and concerns about their learning. The isolation may amplify student perceptions of external control--the belief that success and achievement are generally a function of factors beyond individual control. One way to ameliorate the damaging effects of social and intellectual isolation is to increase the level of learner interaction with each other, and the instructor, by utilizing the technologies made available by the support organization, such as computer mediated communication (Savard, Mitchell, Abrami, & Corso, 1995).

The following summary outlines the researcher's conceptual framework for the study as it relates to the research literature. The following topics are discussed: learner characteristics, student motivation, learning environment, home environment, and classroom culture.

Summary

The researcher's framework indicated that certain factors may contribute to students' progress in the distance education course. Trueba (1998) reports that many studies have identified characteristics that affect students academic performance (Donmoyer & Kos, 1993; Means, Chelemer, & Knapp, 1991; Wells, 1990; Ogbu, 1978, Legters & McDill, 1994), yet, may still be quite successful if a support system in school is made available to them. He further concludes that these students who are classified as being at risk in educational situations can be quite successful when classroom and school characteristics change. Willis (1992) asserts that understanding the varying backgrounds and needs of distance education students is important when planning a distance education program. Furthermore, background and descriptive data will help in curriculum decisions, and what to expect in terms of learning from distance education students (Willis, 1992).

The researcher's conceptual framework also included motivation, which was divided into extrinsic and intrinsic motivational aspects. McCombs (1994) asserts that motivation and learning can be reinforced by managing behavior through extrinsic motivators or external rewards and incentives such as tokens, prizes, or even grades. However, excessive use of extrinsic rewards may lead to resentment, limited transfer, dependence on teachers, and undermining of intrinsic motivation (Deci, 1985; McCombs & Pope, 1994). Kember (1990) indicates that the inclusion of extrinsic motivators will help ensure student success in distance education programs. In this study, the high school students were given the opportunity to enroll in a college distance education course for the enrollment fee of \$25.00.

Kember (1990) suggests that the intrinsic motivation is influenced by the academic integration component. If the subject matter is compatible with the student's interests, then intrinsic motivation will be heightened. Research has shown that low achieving students have a natural tendency to be intrinsically motivated to learn when they focus on personal learning goals, when they do not have to fear failure, and when they perceive what they are learning as being personally meaningful and relevant (Clifford, 1984; Nicholls, 1983; McCombs, 1994).

The learner environment included the academic support system and all aspects of the distance education course offered by the institution. This included the distance education course and materials, access to technology, teacher/student interaction, counseling, tutorial/facilitator assistance, and the high school academic support system. Kember (1990) asserts that the students ability to integrate into the academic environment will determine their ability to successfully complete the course. Finn (1989), Kelly (1989) and Natriello (1984) suggest that to improve student achievement, the schools must encourage student involvement in the academic environment by stimulating students' interest, increasing skill deficiencies, and rewarding their efforts.

Kember (1990) states that the home environment may influence the students' progress in a distance education course. He further concludes that outside influences and family obligations may hinder the student's ability to successfully complete the distance education course. Utah (1988) states that certain environmental conditions such as familial, socioeconomic status, social isolation that contribute to a student's low achievement in the traditional classroom may also affect their achievement in distance

education. Thus, understanding the varying backgrounds and needs of distant learners is important when planning a distance education program (Willis, 1992). Furthermore, background and descriptive data will help in curriculum decisions, and what to expect in terms of learning from distant students.

The classroom culture was included in the framework to examine how students adapted to their learning environment. Kember (1990) states that students will have difficulty adapting to the norms and expectations of the classroom if the student has a different perception of a task or conception of knowledge, to the instructor. Collins and Green (1990) state that the norms and expectations that the instructor establishes for the classroom will affect the academic achievement of students who are comfortable with the norms and expectations of their traditional classroom environment. Furthermore, the student's inability to adapt to the culture or the norms and expectations of the social group in the classroom will have an affect on student progress.

Overall, the above findings from the review of the literature indicate that distance education technologies may be an effective medium to use with low-achieving high school students in this study. It further supports the premise that low-achieving students can be successfully taught in a distance education environment, if the proper design elements are incorporated into the course. Yet, the limited studies on distance education and factors that influence the progress of low-achieving students indicates a major gap in the literature review and suggests that more studies are needed to examine the factors that influence the progress of students enrolled in distance education courses. This gap in the research supported the need for this study.

In conclusion, the review of the literature supports the premise that distance education may be a viable alternative as an intervention to transition low-achieving high school students into a higher academic learning environment. However, the gap in the research indicates that more studies are needed to address how certain factors influence the student's ability to succeed in the course. Understanding which factors contribute to high school low-achieving students success or failure in distance education may improve distance education programs and may enable the instructor and the academic support system to effectively meet the educational needs of students.

CHAPTER III

METHODOLOGY

Distance education has become a major teaching and learning tool for community colleges, universities, and high schools. However, despite the longevity of distance education in college programs, little research pertains to distance education in high schools. Furthermore, there are no studies that examine how low-achieving high school students approach learning in a college level, distance education course. Although there is considerable evidence of the effectiveness of distance education in bringing about learning, many questions about how students approach learning in this type of environment remain unanswered. In addition, conflicting results have been noted from studies of the factors that contributed to the progress of low achieving high school students enrolled in distance education courses (Cookson, 1989; Dille & Mezack, 1991; Willis, 1993) and few studies have discriminated among the different types of successful learners in distant learning situations. Thus, the current study sought to identify how certain factors contribute to the progress of low-achieving high school students in a college-level, distance education course. If these factors can be identified, educators may be able to provide interventions that promote high school student success in college distance education courses.

Research Design

This research project employed a qualitative methodology using a multiple-case study design. A case study design focuses on the object of the study, “the case” and is employed to gain an in-depth understanding of the situation and meaning for those involved and represents an intensive, holistic description and analysis of a single unit or multiple units such as an individual, group, or intervention (Merriam, 1998). In this study, the case represented four low-achieving high school students enrolled in a college distance education course.

The interest in case study design is in process rather than outcomes, in context rather than a specific variable, in discovery rather than confirmation (Merriam, 1998). Yin (1989) maintains that research designs for qualitative studies provide a logical sequence that ties the study questions to the data collection, data analysis, and the research findings. Since little information is available concerning the factors that contribute to the progress of low achieving high school students in a college distance education course, this study was exploratory (Yin, 1989). It used data that had been systematically obtained and analyzed (Yin, 1989) to present and describe a detailed account of how students approached learning in a distance education situation.

Participant Setting Boundaries

The high school principal and high school computer instructor of Silver State High School, an alternative high school for credit-deficient students, and the researcher selected five high school students to participate in a college-level, distance education

course. The students were characterized as low-achievers by the mainstream high school system because they had been expelled from school for reasons such as high absenteeism and credit deficiency. However, according to the principal and computer instructor, these students were comfortable using computers, were considered to be well-behaved or “good students” in the classroom and obtained average grades in school. Based on these criteria, the researcher felt that the students would be good participants for this study. Table 3 outlines the students’ profile obtained from the demographic survey.

Table 3
High School Student Demographics

Students	Ethnicity	Age	Grade Level	GPA	Extra Curricular Activities	# Parents in Household	Annual Family Income	Home PC
Chris	African American	17	Senior	2.0	Employment	1	20,000	Yes
Marvin	White	16	Junior	2.2	Skate Boarding	2	120,000	Yes
Vivica	Hispanic	17	Senior	2.7	Parenting Employment	1	20,000	No
Dell	African American	16	Junior	2.0	None	1	27,000	Yes
Jack	White	17	Senior	2.3	None	0	20,000	No

All of the students chosen were characterized as having low academic performance and had GPA’s below 2.9. They ranged in age, ethnicity, and socio-economic background (see Table 3). Initially, there were two African-Americans and one Hispanic female, and two White males in the study. However, Jack, a White male,

another high school and dropped out of the study. This was the first time that the students had been simultaneously enrolled in high school and a college course, and their first time being enrolled in a college and distance education course. Three of the students had a computer at home.

The students were enrolled in a college distance education course taught by the researcher called, *Research on the Internet*. This course has been taught since 1996. Each semester, there are approximately five to ten high school students out of approximately 45 students enrolled in the college course. In addition, distance learners both from high school and college are enrolled from remote locations, such as Pahrump, Laughlin, Tonopah, Boulder City, and Las Vegas. This study investigated factors which contributed to the progress of four high school students enrolled in a college distance education course, in Spring, 1999.

Data collection began after the participants were identified. However, prior to entry into the field, steps were taken to assure the rights of participants were protected. To assure this study met these ethical standards, a research proposal was submitted to the University of Nevada, Las Vegas Human Subjects Committee for approval and the Clark County School District (see Appendix F).

Telecourse

The Research on the Internet course consisted of 24, 30-minute videotaped lectures. The course was broadcast on the local PBS station at 4:00 a.m. on Monday mornings. All students in the course who did not have a VCR at home to record the prerecorded video lectures could check out the videos at the community college campus

libraries. However, the students planned to view the video lectures in the high school classroom.

The 15-week, college course was designed to teach students how to conduct library research on the Internet. This was a three-credit general elective course offered by the Community College of Southern Nevada. The course was generally targeted towards first-year college students who were transitioning into the academic environment.

Facilitator

The high school computer instructor was the facilitator and a participant observer in the study. Merriam (1998) defines the primary role of the participant observer as having an active membership role in the study; yet, is able to separate himself or herself from the group to observe the interactions within the setting. According to the research literature, the support provided by the facilitator has been consistently cited as critical to the effectiveness of a distance education program (McCleary & Egan, 1989; Chute, Hancock, & Balthazar, 1991).

The facilitator was given twenty-four video-taped lectures and all course materials. In addition, he was given the login and password to the instructor's course homepage, which contained the course materials online. The facilitator's responsibilities included: assisting the students in the classroom, taking class attendance, making sure that the students submitted their class assignments via email to the instructor, and assisting them with course work.

Instructor

The Research on the Internet course was taught via lecture on videotape. Because the instruction was previously recorded, the instructor had planned on interacting with the students online via email throughout the 15-week semester. Weekly observation of the students in the high school classroom were also planned. Bogdan and Biklen (1992) indicate that the time and events surrounding researcher visits will affect the nature of the data collected, and Wolcott (1988) stresses the importance of staying in the field long enough to see a full cycle of activity.

Setting

High school

This study was conducted at Silver State High School, North, an alternative high school for potential high school dropouts. Silver State enrolled students who were credit deficient and who had been expelled from mainstream high schools. Overall, Silver State High School had a total of four sites in the Las Vegas community: Silver State North, South, East and West. The students in this study were selected from Silver State High School, North. The North school enrolled approximately 221 students from grades nine through twelve.

Classroom

Initially, arrangements had been made for the students to view the video lectures in a conference room on the high school campus. The class was scheduled to meet from 12:30 p.m. - 1:30 p.m on Tuesday afternoons. The course facilitator planned to supervise

the class while they watched the videos. Students viewed a total of two lectures, one hour a day (30 min. each), once a week, for 12 weeks. The remaining three weeks were used to review course material and prepare for the final exam.

The students in this study interacted face-to-face with the facilitator. However, the instructor planned to communicate with the students via email, desktop video conferencing, the telephone, class visits, and during scheduled office hours (four hours per week). The college campus was located approximately six miles from Silver State High School North. The students needed transportation to the college in order to meet with the instructor during on-campus office hours.

The students planned to use their first class hour on Tuesday mornings to work on their class assignments in the high school computer lab. In addition, students had to schedule homework time outside of class to complete their assignments. All students had access to the high school and community college's computer labs. The students also had the option to work on their assignments independently or collaboratively.

Computer Laboratory

Initially, three of the eighteen computers in the Silver State High School, North computer laboratory were connected to the Internet. However, the computer lab was reduced to two computers with Internet connectivity.

Course Materials

Email

Each student was given an Internet account to access *Pine* (Pine, 1989), an email software package, and access to Internet resources. The students could also access their email account and the course material from their home computer, if they had access to the Internet. Email was used to communicate with the instructor and other college students who were enrolled in the course. Furthermore, the students planned to use email to send their completed assignments to the instructor.

Listserv

The students communicated with other students in the course by using a class discussion group or listserv that was assigned for the class. The listserv was intended to give the students the opportunity to interact with one another enrolled in the class, ask questions, and share information. The listserv was also used to promote a classroom community among the students in the course.

Desktop Videoconferencing

The instructor planned to use desktop videoconferencing in the study to facilitate communication with the students in real-time. The system was installed in the high school computer lab, the Community College of Southern Nevada, Cheyenne campus computer lab, the instructor's office and home. The system had a camera positioned on top of the computer, which allowed the instructor and student to see one another. In addition, a headset and microphone allowed the students to verbally communicate with the instructor.

The discussions from the text-based chat room and audio conferencing session in desktop videoconferencing was going to be recorded and transcribed by an assistant and used in the data analysis. However, due to technical difficulties with Internet connectivity in the high school computer lab, desktop videoconferencing was not used in this study.

World Wide Web

An instructional-based web site was developed, located at (<http://www.nevada.edu/~jflowers>). The students were given a login and password to access course materials such as handouts and assignments. Students were also provided with links to various WWW resources via the web page to complete their class assignments.

Data Collection

The research design for this study employed multiple data collection sources and strategies in order to support data triangulation (Lancy, 1993; Miles & Huberman, 1994; Wolcott, 1988). Wolcott (1988) notes that the strength of fieldwork is in obtaining information in many ways rather than just one and Lancy (1993) suggests that triangulation is one of the most effective ways to avoid changes of subjectivity since researcher observation can be supported with concurring evidence from other independent sources.

Since answers to questions about learner characteristics and other factors that influence student progress best come from what they do, say and think in a distance education setting, classroom observations, email, and interview were used as the primary

data collection techniques and field notes, email messages, interview responses, assignments and grades, were used as the primary data sources.

Classroom Observations

The instructor observed the high school classroom and computer lab for a total of two hours each week for 10 weeks. Bogdan and Biklen (1992) indicate that the time and events surrounding researcher visits will affect the nature of the data collected, and Wolcott (1988) stresses the importance of staying in the field long enough to see a full cycle of activity.

A camcorder was set up in the high school classroom so that the facilitator could videotape the students during class meetings. Upon completion of the videotaped class sessions, the researcher obtained the video from the facilitator so that she could observe and analyze the students' behavior and interactions in the classroom. During class visits to the high school computer laboratory, the instructor observed the students and interacted with them when assistance was needed.

Field notes were taken that included both descriptive information, analytical, and reflective thoughts. Other conversation, such as social conversations between students, were noted, and if appropriate, summarized. All field notes were dated and labeled. A notebook was kept that recorded the activities of the researcher as the instructor, including important thoughts, reflections, or problems that arose each week during the study. Occasionally, the facilitator was questioned about activities underway or other events as appropriate.

Miles and Huberman (1994) indicate that observation allows researchers the opportunity to participate in the lives of the people in the study while maintaining a professional distance permitting the researcher to adequately record what is seen and heard. It provides the opportunity for the researcher to get to know the participants and to develop a rapport and trust with them, allowing them the freedom to tell the researcher things that they otherwise would not (Glesne & Pleshkin, 1992). Length of time spent in the field is an important factor in establishing trust between researcher and participants. Furthermore, as the researcher spends more time in the field, participants are more likely to be open and comprehensive as they interact with the researcher and less likely to fake answers and behaviors (Fetterman, 1989; Glesne & Peshkin, 1992).

Email

All email correspondence between the facilitator, the students, and instructor was saved and printed for data analysis. The content of the email messages was analyzed to determine if it contained valuable information or salient themes regarding student progress, frustration with the course, and interaction. For example, a large number of email messages indicated the student's willingness to interact and become an active participant in the distance education course; a small number of messages indicated limited interaction.

Desktop Videoconferencing

Holland (1996) found that desktop videoconferencing creates a learning environment in which students are able to personally meet their classmates, share ideas, and discuss homework. The text-based chat session utilized in desktop videoconferencing

was going to be recorded by an assistant and used in the data analysis in this study. The audio conferences were going to be transcribed by an assistant and used as data. The student's use of the desktop videoconferencing system was going to be used as an indicator of the student's willingness to explore using advanced technology and the willingness to communicate with the instructor and other students. However, as previously noted, there were technical difficulties using the desktop videoconferencing system, and it was not used in this study.

Student Interviews

This study used a semi-structured interview format. Informal, semi-structured interviews are often said to resemble casual conversation (Fetterman, 1989; Lancy, 1993; Merriam, 1998). Lancy (1993) suggests that participants may be more forthcoming with candid thoughts and beliefs in an informal conversation than in a formal interview. Interviewing also provides researchers with a data collection technique that allows them to gather information in the participant's own words (Bogdan & Biklen, 1992). This helps researchers put their observations into a large context in order to explain what they have seen (Fetterman, 1989).

An interview guide was developed to provide the researcher with a list of questions to ask the participants (Appendix A1). Merriam (1998) indicates that an interview guide allows the new researcher to gain the experience and confidence needed to conduct more open-ended questioning. This technique also allowed the researcher to gain more information regarding the factors that contributed to the students' progress in the college course. Eight questions were sent out, one at a time, to the students via email.

The students also sent their responses to the questions to me via email. More questions were asked of students when their responses needed further clarification. School district policy prevented the researcher from having access to student records. Therefore, a questionnaire categorized as a written formal interview, was used to collect background information from student participants and is included in Appendix A2.

Assignments

In this study, student assignments were examined as a data source. The assignments were collected on the specified due dates to be analyzed for student comprehension of video lectures and course material; and completeness or incompleteness of homework. Descriptive statistics were compiled about student homework and test grades to see how well students achieved on their homework compared to their classmates in the study and other college students enrolled in the course.

A point system was used to evaluate scores on student homework assignments and exams. High scores indicated student comprehension, initiative to do well on the assignments, and motivation to perform well in the course. Low scores indicated lack of comprehension and lack of motivation. After the materials were reviewed, pertinent information from them was added to the data collected from classroom observations and interviews.

Student attendance records were also kept. A high absenteeism rate indicated low student participation, a low absenteeism rate indicated high participation, and a

moderately high absenteeism rate indicated average student participation in the classroom.

Data Analysis

The inductive, constant comparative approach (Merriam, 1998) was employed in this study to code and categorize the data from classroom observations, email messages, and student interviews to generate meaning from the data, and to confirm the findings. The raw data obtained from multiple sources was entered in a qualitative software, *Atlasti*, data file. This data was coded, and then the qualitative software was used to extract data, by code to be placed in new categories. This procedure helped the researcher to review, revise, and refine categories of data and codes in the analysis process employed in this study.

However, *Atlasti* was not used in the final phase of data analysis. The concept mapping component of *Atlasti* required the researcher to spend a great deal of time learning how to use the software before the data could be analyzed. Therefore, the traditional method of analyzing the data on paper was used instead of using the software program.

Two stages of data analysis were employed in chapter four: within-case analysis and cross-case analysis (Merriam, 1998). The categories, narrative descriptions, and themes constructed from the researcher's data were analyzed within each case to explain how and which factors contributed to the students' progress in the course. In each student case, the various sources of data were reviewed and reread, redefined, and reorganized the

categories and subcategories. Eventually this process yielded 10 categories and 56 subcategories (see Appendix D). Descriptive statistics were also used to report data such as student test scores, and class attendance. After each case study was analyzed, a cross-case analysis was used to compare and contrast the factors that contributed to the students' progress in the study.

Miles and Huberman (1994) provide a number of tactics for researchers to use as they seek to generate meaning from the coded, categorized data. In this study, the observed patterns or themes in variables were observed, such as identifying instances of lack of access to technology, student motivation, self-confidence and absenteeism; and looked for multiple instances of the same patterns and identified cases where the pattern was not evident. In addition, similar things were clustered (computer access and academic support); compared and contrasted participants, events or patterns to derive meaning; and noted links or relationships between variables, such as school attendance and test scores. Potential intervening variables such as outside influences were identified, and logical explanations or interpretations were sought for observed events in the distance education course, then supported or rejected these hypotheses with evidence from the data.

Trustworthiness

Ensuring validity and reliability in qualitative research involves conducting the investigation in an ethical manner (Merriam, 1998). Therefore, the present exploratory study used the following strategies to assure the quality of the study: dependability

(consistency), transferability (applicability), and credibility (truth value) (Lincoln & Guba, 1985; Merriam, 1998).

Dependability (consistency)

Data were organized and coded in *Atlasti* so that all the reported information could be traced directly to the source of data. The participants were also assigned to a specific identification code. Interview notes and field notes were given different filenames in *Atlasti* and *WordPerfect* software programs. During the study, class visits were made to the students' high school and a rapport was established with them. The students also met on the college campus. The students were neither threatened nor confused by the researcher's dual role. Therefore, there was reason to have confidence in the accuracy of their responses.

The researcher had a prolonged engagement with, and made repeated observations of the four students in the study. In addition, the researcher engaged in classroom observation throughout the 15-week semester, and interacted with the students. The computer instructor who was the facilitator in the classroom was also involved in all phases of the research, from the beginning of the study, to writing up the findings. The data from the student interviews were also shared with the facilitator, so that he too, would know how the students experienced learning in the college distance education course.

The analyzed data were checked for consistency. The coded data and selected categories were checked by another doctoral student who was also conducting a

qualitative research study to make sure that the researcher clearly defined and organized the data correctly.

Transferability (applicability)

Lincoln and Guba (1985) maintain that determining the transferability is the joint responsibility of the researcher and the reader. The researcher must clearly describe, in detail, the context of the study, and the reader must compare and contrast the researcher's study with others and then determine whether the findings are transferable to his or her particular setting. In this study, transferability was enhanced by thick description of the setting and of the actions of participants in each of the cases. Several types of data were collected involving observations, interviews, students' assignments and attendance records to provide lengthy and detailed information to be analyzed. In addition, the multiple types of data collected and analyzed provided a means of triangulation to create a rich, multi-dimensional picture for each participant in the study.

Credibility (truth value)

First, multiple sources of data were used to obtain triangulation. These included student interviews, class observations, email messages, discussions with the facilitator, student attendance and test score records. The dissertation also provided narrative descriptions of activities, using quotes from study participants, and their responses were recorded in the dissertation. Of these sources, interviews, class observations, and quotes from study participants provided the most information to help lead to how certain factors contributed to the students' progress in the college course.

Member checking was another strategy employed to ensure credibility. The data and interpretations were reviewed with the facilitator and another doctoral student. They were asked whether the data were accurate and the researcher's interpretations plausible. As the data analysis was addressed, findings were reviewed with the committee. In addition, colleagues and committee members were frequently engaged in discussions about the progress of the study. Consultation with a peer also provided further opportunities for on-going discussion which helped the researcher to articulate ideas and to reexamine the data.

Confirmability (objectivity)

Confirmability of research is defined as the degree to which the researcher can demonstrate the neutrality or the objectivity of the research interpretations through a "confirmability audit" (Lincoln & Guba, 1985) which allows external reviews to judge the conclusions, interpretations, and recommendations of the research. In this study, triangulation strategies were employed across the individual cases and in the cross-case analysis. Plans for using these strategies were included in the research proposal, were implemented during data collection and analysis, and were described in the dissertation. Evidence supporting conclusions included direct quotations from the original data and outlined researcher assumptions and biases in the study.

Data Reporting

The research results are reported in Chapter IV. A brief overview of the data collection methods and data analysis are presented. This is followed by narrative description of the researcher's experience as the instructor with the high school students

in the distance education course. Next, four individual case studies are presented which describe how each student approached learning in the college course. Specific factors are also highlighted which had the most significant influence on the students' progress in the course. A cross-case comparative analysis of the four individual cases will follow.

CHAPTER IV

RESULTS

The purpose of this study was to identify factors that contributed to the progress of high school students enrolled in a college distance education course. This was accomplished through the analysis of classroom observations, field notes, and responses to questions asked in online interviews (see Appendix A1). Six research questions guided this investigation:

1. What factors in the educational setting may support or constrain students' progress in a distance education course?
2. What is the relationship of the learning environment, including the learning space, access to technology, home, and institutional policies, to a student's progress?
3. What is the relationship of the content and methods of the course to a student's progress in a distance education course?
4. What is the relationship of the academic support system, including classroom assistance, assistance at home, and the role of the instructor to a student's progress in a distance education course?

5. What is the relationship of classroom culture, including student interactions with the instructor, with each other, and the role of the listserv discussions to a student's progress?

6. How do individual learner characteristics contribute to a student's progress in a distance education course?

The chapter begins with a brief overview of the data collection methods and data analysis procedures. To orient the reader to the research setting, a narrative approach to the global experience of the researcher as the instructor in this distance education course is provided. Following this short narrative are the individual case study analyses. Time elements are included throughout the case studies to show the phases of student progress that took place in the study. A cross-case comparative analysis of the four individual cases is presented in the last section of this chapter.

Data Collection Overview

The research was conducted through 20 classroom observations, nine on the high school campus and 11 on the college campus. Semi-structured interviews (Merriam,1998) were conducted via email near the end of the Spring 1999 semester. Students' assignments, attendance records, and email correspondence provided a means of triangulation (Merriam,1998; Yin, 1994). All of the data sources were downloaded into *Atlasti*, a qualitative research data analysis software program and were coded and grouped into categories. The categories were constructed by analyzing the data that was coded and were expanded as other factors that contributed to the students' learning experience in the

distance education course were discovered. These categories or families were grouped and compared to be further analyzed within the study's theoretical framework.

Descriptive statistics of students' homework assignments and final examinations were compiled and analyzed to see how well students performed on their homework compared to their classmates in the study. Student attendance records were also kept to determine the amount of student participation in class.

Global Analysis

Entering Silver State High School North

Silver State High School, North, an alternative high school, enrolled students who had been expelled from mainstream high school for reasons such as high absenteeism, truancy, and pregnancy. Upon enrollment into Silver State High School, students could decide whether to attend school during the day or during the evening. However, they could not enroll or take classes in both sessions. This study focused on students who were attending classes during the morning session.

There were four Silver State High School campuses (North, South, East, and West). The South, East, and West campuses were new buildings painted with bright southwestern colors. Beautiful desert landscaping surrounded the entire school yard. The students in this study were enrolled at Silver State High School, North. This school was different from the other three (South, East, & West) Silver State campuses. Silver State North was the oldest. It was also located adjacently to a waste disposal facility, which

could be seen from the school yard. Odors from the disposal could be smelled by anyone who was on or near the campus.

As I approached Silver State North at 7:30 a.m. on my first visit to the campus, the first thing that I noticed was the old trailer modules which served as offices and classrooms. They were a light tan or beige color and desperately needed a new coat of paint. Barbed wire fencing enclosed the entire campus. There was very little grass on the school grounds. Dirt seemed to surround the trailer modules. In fact, there was more dirt than grass. I looked for some signs of landscaping but found none.

As I came closer to the entrance of the school gate, I observed two police cars parked near the entrance of the school. Two White policemen were in the process of handcuffing two African-American female students who had obviously gotten into trouble. There were two school monitors and several students observing the arrest. Later, the facilitator told me that the two girls had been arrested for fighting. He confirmed that the scene that I had witnessed was a normal day at Silver State. In fact, according to the facilitator, the police made regular visits to the campus at least three to four times a week.

After pausing for a minute to observe the police encounter, I headed toward the classroom where I would be meeting my students enrolled in the college distance education course. As I walked down the narrow sidewalks, I could not help but notice the students' appearance. They did not look well kept. Some of the students dressed very poorly in clothes that were dirty and pants that were sagging. Some of the girls were wearing entirely too much makeup. I also saw purple and green hair. I tried to remind myself that what I saw might be considered normal in a high school setting, but it all

seemed to be a little to the extreme. The students did not look happy. Even though several of them had scowls on their faces, they looked at me with curiosity. I smiled and said hello to several of them as I passed by. They hesitated a little, but replied with a half smile. One student asked if I was a new teacher. I replied, "No." He commented, "That's too bad. I probably would go to your class." He smiled and continued walking. I laughed a little to myself and continued walking.

As the instructor, I sensed a feeling of hopelessness and despair in the atmosphere as well as on the students' faces. I know that I would not have been very happy if I had to attend school on that campus because it looked so gloomy and uninviting. As I looked around the school yard, I questioned as to what kind of learning actually took place in the classrooms.

I was scheduled to meet with the students in the classroom to review the course syllabus, and to discuss how video instruction and the Internet would be used to deliver the course. Mr. Smith, the facilitator for the course, informed me that he had made arrangements for the students to meet in the faculty conference room where they would have access to a TV/VCR, a computer with Internet access, and a printer. He stated that the computer lab would probably be a distraction for my class because other students would be using it throughout the semester. Unfortunately, I agreed to this arrangement before I actually saw the conference room.

As I entered the conference room, I immediately noticed all of the clutter around the room. There were boxes stacked in corners, and computer parts scattered all over, including on the end of the table. It was also very dusty. I noticed a laptop computer

positioned in the center of the table, the only operating computer in the room. A printer stood on a table near the entrance to the door. The TV/VCR was positioned towards the end of the table, facing the students. I thought to myself, "This conference room is not going to work. We've got to find another location."

The facilitator must have read the expression on my face because he immediately apologized for all of the clutter. He had just been promoted as the technology coordinator for the school about a week ago, and had been given the assignment to repair several computers. He was using the conference room both as his office and as a place to work on the computers. He promised me that the situation would only be temporary. He then suggested that we could probably use the computer lab early in the morning and after school, because very few students used the facility. Most of the students did not bother to hang around after school. However, he had to obtain permission from the new computer instructor before arrangements could be made.

While the facilitator and I were talking, I glanced at the five students who sat around the square shaped conference table. There were two African-American females, one Hispanic female, and two White males (see Figure 4.1). The three females sat together, two on one side of the table and one on the opposite side facing them. The two males sat towards the opposite end of the table away from the girls. The students stared at me with a look of sleepiness and boredom on their faces. As Mr. Smith introduced me to them, each student responded by saying, "Good morning."

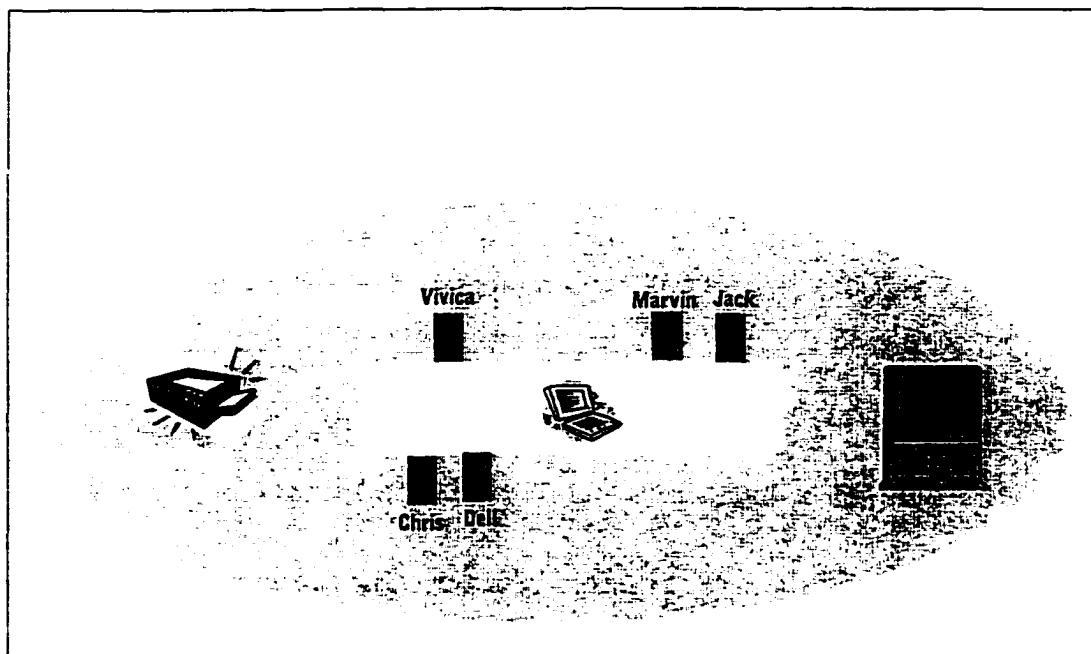


Figure 4.1 High School Classroom Conference Room

I explained to the students who I was, what the distance education program was about, and why they had been selected to enroll in the course. Although they looked a little bored, they responded to my inquiries. I found out that all five students (Vivica, Chris, Dell, Marvin, and Jack) had some computer experience and knowledge of the Internet. One student, Marvin had asked if the class was going to be hard and if there was a lot of work. He seemed to capture the other students' attention when he asked that question. I told them that the course was challenging, but that I had no doubt that they would do well

in the course. Upon the conclusion of the class meeting, I felt that I had alleviated some of the anxieties the students appeared to have felt.

After our class meeting, Mr. Smith took me over to the computer lab. The atmosphere was somewhat similar to the conference room but bigger. The walls were covered with dark brown paneling, the carpet was torn and extremely dirty, the room was cluttered with computers and computer parts, and there was dust all over the place. Two rows of tables with old, outdated computers were aligned in the center of the classroom. Several other tables with computers were positioned against the wall around the perimeter of the classroom. The instructor's desk was located in the far right-hand corner of the room and was cluttered with papers. Again, Mr. Smith apologized for the disorganized classroom.

The conditions of the school eventually contributed to several changes made to the study's setting during the course of the research. During the second week of the semester, the students were moved from the high school conference room to the high school computer lab. As it turned out, they were able to use the computer lab during first hour and after school. Mr. Smith reorganized the room so that the students were able to view the videos while they worked on the two computers that had access to the Internet (see Figure 4.2). For four weeks, I observed the students via videotapes and classroom observations in the high school computer lab while they adjusted to learning in a distance education environment.

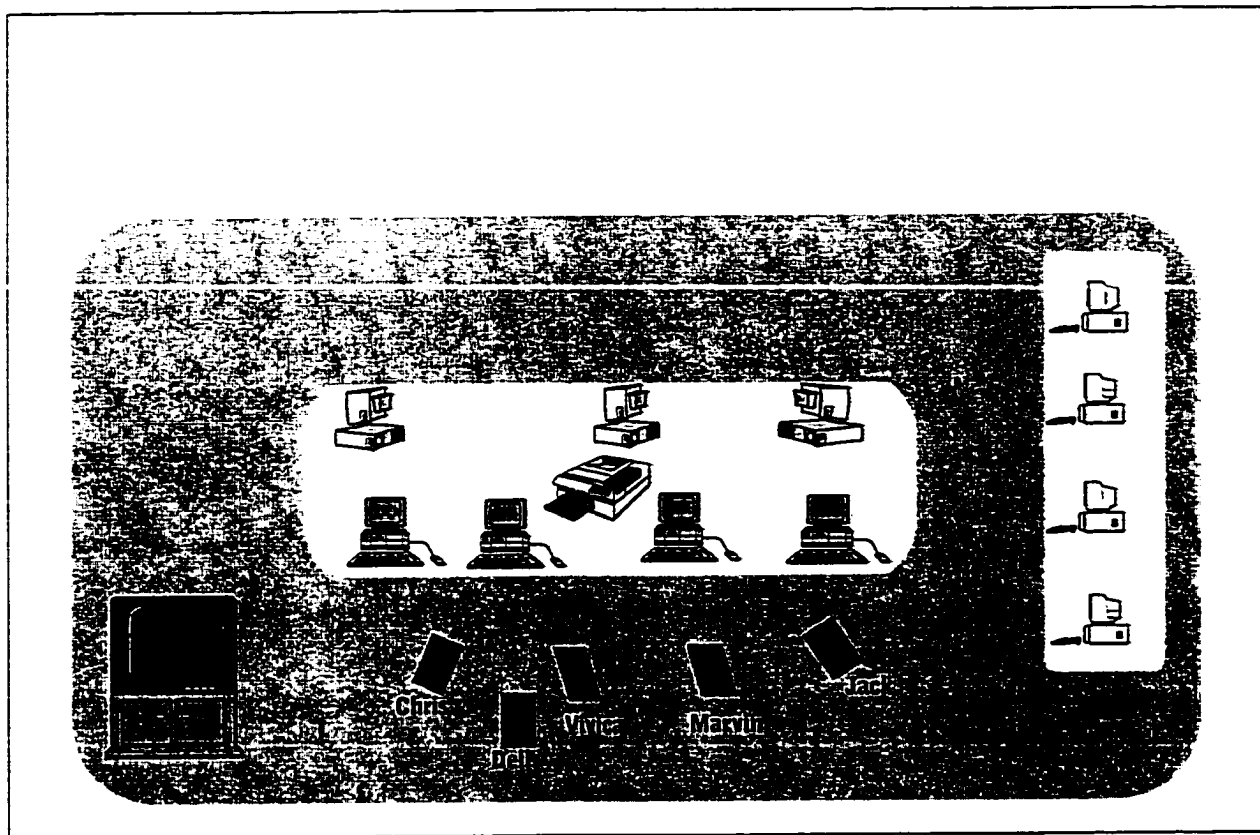


Figure 4.2 High School Computer Lab Distance Education Classroom

Observing the Group Dynamics In the High School Computer Lab

The first couple of observations provided me with information about this cluster of students in general. One of the things that I intended to study was how the students arranged themselves as a group. Although the students sat together in a semi-circle during the video lectures, Marvin and Jack seemed to distance themselves from the girls in the group. I also noticed that Dell seemed to sit slightly behind Chris and Vivica instead of beside them. She always appeared to be looking over their shoulder during the times the

video lecture was being presented and during the times the students were working on the computer.

The group dynamics in the classroom shifted when Jack dropped out of the course. He had been living in a group home for boys, and was to be transferred to another location. He was also going to enroll in another Silver State High School site. Up to this point, there seemed to be more competition between the two males in the classroom. For example, Jack did not like it when Marvin had my attention or when I would ask Marvin to demonstrate an activity on the computer. On one occasion, Jack would immediately position himself in front of the computer after I had asked Marvin to demonstrate an activity. There were also other instances when Jack would interrupt my conversation with Marvin to direct my attention towards him. However, once Jack left the group, Marvin took on a leadership role by frequently volunteering for class activities, an action he had not taken when Jack was present.

I did not notice any competition between the three girls. They seemed to stick together as a group with Vivica being the leader. This was evident during the times when the students watched the videos and while they worked on the computer. There were only two computers in the high school computer lab, located next to each other. Usually, Vivica, Chris, and Dell sat at one computer while Marvin worked alone on the other.

During a classroom observation, I noticed that Chris and Vivica took turns working on the computer more than Dell did. She never volunteered and seemed somewhat reluctant to be an active participant. On several occasions, I saw both Chris and Vivica encouraging Dell to participate. They would often have to coax her into the

group and guide her as she worked on the computer. Marvin would volunteer to assist Dell. Thus, another shift within the group became apparent when I noticed more and more that Dell continued to position herself on the perimeter of the group instead of within the group. It is important to note that in the beginning of the course, Dell was not being excluded from the group but chose to remain on the outskirts of the group. Yet, as Dell's participation in class decreased and absenteeism increased, her classmates stopped trying to help her with class activities.

There was very little interaction among the four students during the video lectures. They usually sat in a semi circle while they watched the video lecture for the entire half hour. Marvin or Mr. Smith would serve as the facilitator during the video lectures. On occasion, they would pause, rewind, and fast forward the video lecture when prompted by the other students.

However, interaction between the students increased during class meetings when the students worked on the computer while the video lecture was being presented. In one observation, I saw Marvin and Vivica laughing and talking while they worked on the computer. Mr. Smith was standing in the background watching the students. Vivica prompted Marvin to walk over to the VCR and pause the video, so that she could display the same information on her computer screen before the lecture continued. Chris and Dell usually sat beside Vivica and Marvin so that they could watch them enter information on the computer before trying on their own.

The Transition from the High School Campus to the College Campus

After approximately four weeks had passed, I decided that the high school computer lab was not conducive for the students to progress in the course. The students needed the opportunity to spend more time using their own computer to practice instead of having to share one with a classmate. After having a discussion with the facilitator and the high school counselor, transportation arrangements were made by the counselor for the students to visit the college campus every Friday for four hours (12:30 - 4:30 p.m.) during the remainder of the 15-week semester. During this time, the students were given the opportunity to view the video lectures and use the college computer lab to work on class assignments. However, the students still continued to meet once a week as a group in the high school computer lab to work on course assignments.

The change in the environment made a world of difference for the students, especially in the computer lab. I will never forget the expression on the students' faces during their first visit to the college campus. As they entered the computer lab, the students stood frozen with a look of disbelief on their faces as they stared at the large number of computers that were available for them as well as other students to use. Marvin ran to one of the computer pods, (a workstation which holds about eighteen computers) immediately sat down at a computer and began to explore the icons on the screen.

Vivica, Chris, and Dell giggling amongst themselves, walked over and watched Marvin momentarily, and proceeded to sit down at a computer next to him (See Figure 4.3). Dell watched Chris as she located the icon that connected them to the World Wide Web. She continued to observe Chris for a couple of minutes and proceeded to start the computer on her own.

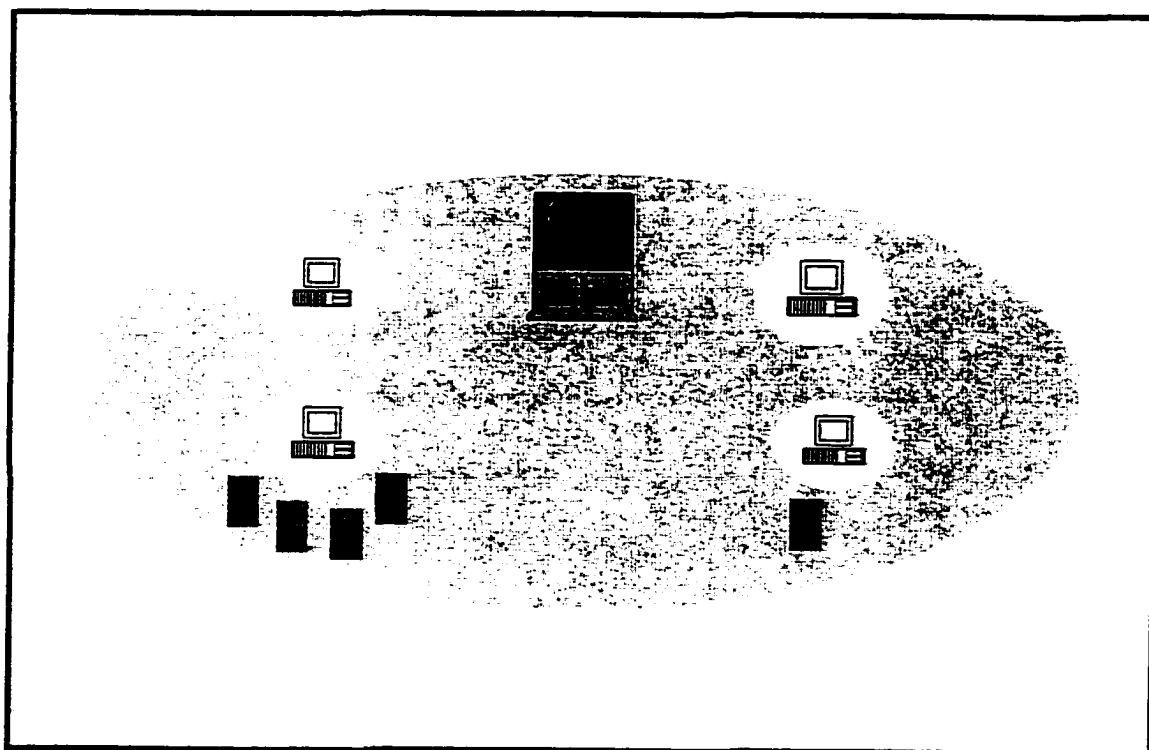


Figure 4.3 Community College Computer Lab

Next, I showed them how to connect to the Internet. They were all laughing and having a good time. Marvin was running, back and forth from the printing station to his computer printing off resources from his favorite World Wide Web sites. Vivica and Chris decided to go into a chatroom before I asked them to logout; Dell still chose to observe Vivica and Chris even though she had her own computer.

I made arrangements for the students to view the video lectures in one of the college's electronic classrooms. In this setting, students were given the opportunity to view the video lectures while working on their own computer (see Figure 4.4). I had hoped that this teaching strategy would help the students to reinforce their learning.

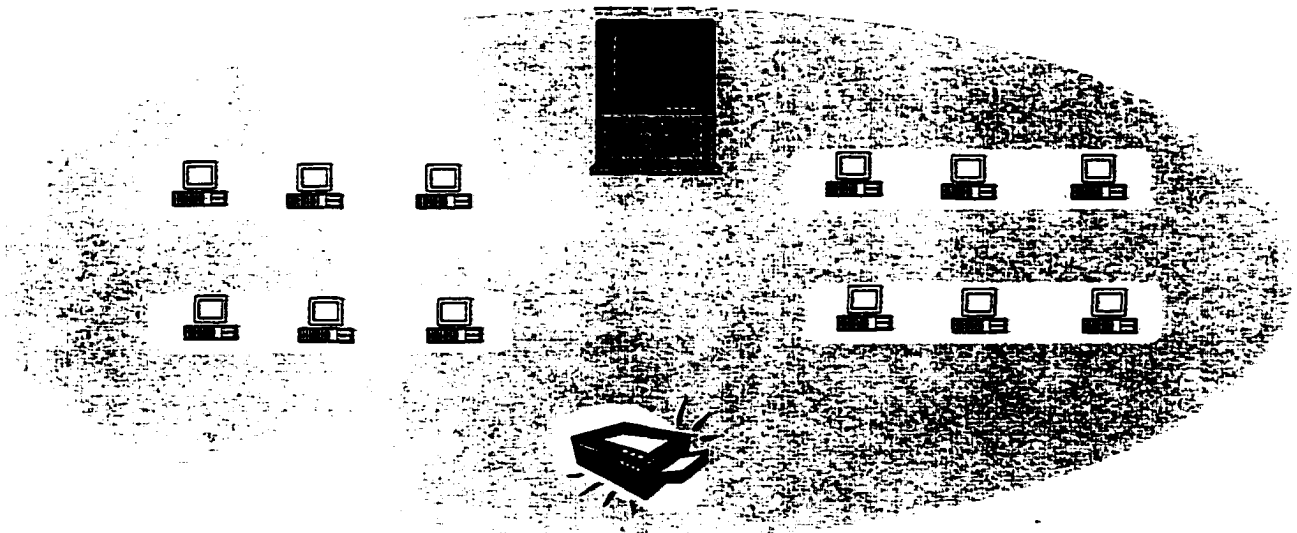


Figure 4.4 Community College Electronic Classroom

However, I found that it had both a positive and negative impact on their learning. For example, students were able to pause or rewind the video to review course material. On the other hand, I noticed in several classroom observations that the students had a tendency to work on their assignments without paying any attention to the video lecture that was being presented. As a result, the facilitator would have to rerun the video during the students next class meeting at the college or during a class meeting on the high school campus.

As the students progressed in the course, I discovered significant changes within the group. The students appeared to be more motivated on the college campus. Neither the facilitator nor I had to prompt the students to take notes or to start the video lectures. As they proceeded on their own.

Additionally, I noticed a change in Vivica and Marvin's attitude towards their classmates. They began to separate themselves from the group to work on their assignments independently. I also thought that they became more competitive with each other. On occasion, Marvin would lend a helping hand to Chris and Dell who seemed to lag behind their classmates. However, as the students progressed, Vivica and Marvin began to ignore Chris and Dell's request for assistance. It was at this time that Chris and Dell's absenteeism rate began to increase, and their participation and performance on class assignments decreased. Marvin and Vivica, on the other hand, continued to do an outstanding job in the class.

Individual Case Analysis

Four individual case studies are presented below. The results are organized into the following main categories: student profile/learner characteristics, high school learning environment, outside influences, distance education learning experience, student perceptions and attitudes, and student outcomes. Each case study begins with a background description of the student's profile. The first category, student profile/learner characteristics provides a description of the student's current profile that was constructed through data analysis in the study. Factors reported within each major category vary with each case. Figure 4.5 illustrates the major factors included in the researcher's conceptual framework and their relationship to learner progress. Only those factors deemed by the researcher to have a positive influence on each student's progress in the college distance education course are discussed. Detailed descriptions of the way in which each factor contributes to the students' progress in the course are presented. The researcher who is also the instructor in the study, will identify herself as the instructor in certain sections of the chapter, when it is important to identify who is speaking. When the data is being reported and discussed the researcher will be identified as the speaker.

Student One: Chris

Chris, an African-American female, was a senior at Silver State High School. She had a 2.0 GPA at the beginning of the Fall 1998 semester. Chris was expelled from mainstream high school in the last quarter of her junior year, Spring 1998 due to high absenteeism and was transferred to Silver State.

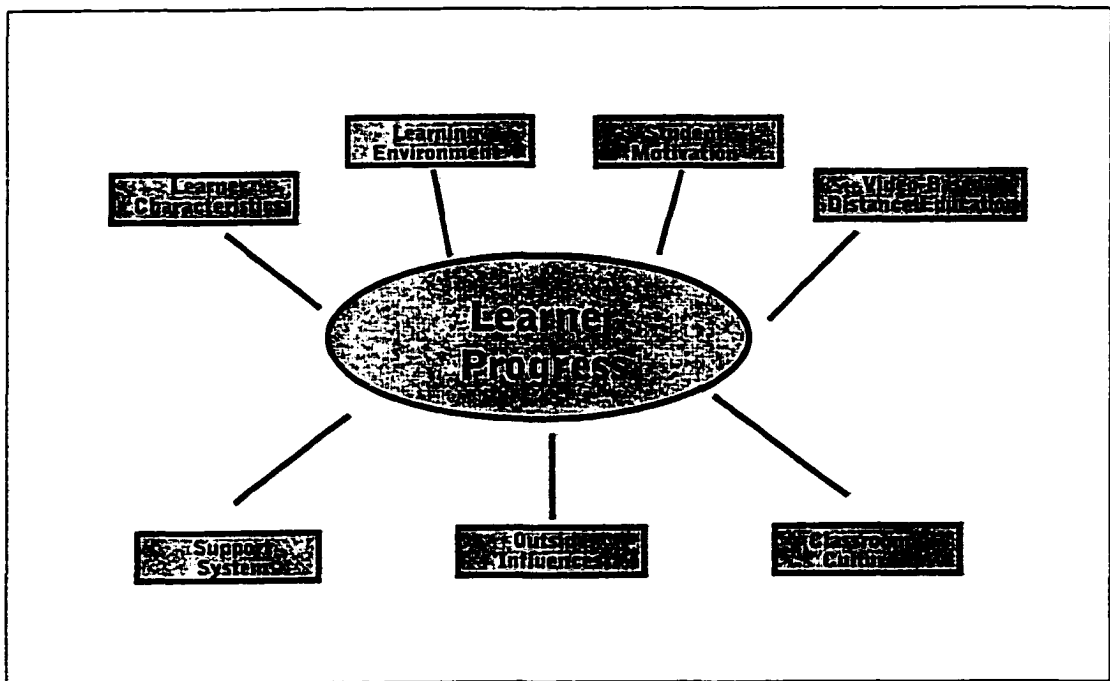


Figure 4.5 Factors Contributing to Learner Progress

She did not reveal the reasons for her expulsion, but indicated that she had planned to attend college upon graduation from high school in May 1999. Chris lived in a single-parent household and worked part-time at a fast-food restaurant. Her mother earned \$20,000 annually.

Chris had previous computer experience and was familiar with the Internet and World Wide Web. She had access to a VCR at home, but did not own a computer. Chris indicated that her aunt and boyfriend had home computers which she used to complete the course work. Chris was an outgoing, talkative member of the group. Her conversations always centered around her boyfriend. The instructor gathered from one of their conversations that Chris lived with her boyfriend. Chris gave the instructor a total of three phone numbers, her aunt's, her mother's, and her boyfriend's just in case she needed to contact her. Chris told the instructor that she was very busy and was always "on the go." Furthermore, she could not wait to graduate so that she could get her own apartment. The instructor thought that Chris seemed to be very independent for 17 years of age. In addition, she pondered why she was living with her boyfriend at such a young age, and why her parents had allowed her to do so. Unfortunately, the instructor never found the answer.

Student Profile/Learner Characteristics

Absenteeism

As the researcher observed the students during the first part of the semester, she noticed that Chris began to miss several classes. By the end of the eighth week of the

college semester, she had been absent four times, two on the high school campus, and two on the college campus. She also began to miss class more frequently on the high school campus towards the last five weeks of the semester. Student attendance records indicate that she missed 12 of 30 class meetings in the 15-week semester (see Table 4.3). Chris' absenteeism from class may have been an indication that she did not have sufficient motivation to participate in the course. However, lack of school attendance did not mean that Chris was not watching the videos or completing course assignments outside of class time, since the videos had been made accessible to her by the facilitator. Data indicate that Chris spent time outside of class to work on her assignments, and there were at least two instances when she went to the college library to view the videos.

Chris also had a tendency to submit her assignments late. According to Mr. Smith, the facilitator, she was usually behind in her course work and would come to class unprepared. She would frequently ask for help from her classmates because she had missed class and had not watched the videos at home. During a class meeting on the high school campus (week 5), Chris asked the facilitator and her classmates for help with the procedures for sending homework assignments via email. Students learned how to do this the first week of class. However, she could not remember the procedures so she asked the facilitator for assistance:

Chris: I still need to learn how to copy/paste my assignments into email. I keep forgetting how to do it. I can't use the Internet at the vocational school. I know you showed us how to do it in the beginning, but I can't remember. I have too much going on.

Facilitator: Come on Chris. It's been three weeks now. Did you ask Vivica or Marvin?

Chris: I did one time.

Mr. Smith also stated that Chris was really struggling to catch up with her classmates. He felt that although she worked part time, she was really spending too much time with her boyfriend. Chris' scores on her assignments were also very low (see Appendix B).

After about the eighth week of video observations, the researcher observed a recurring pattern in Chris' behavior. The researcher noticed that Chris had a tendency to lay her head down on the desk while the instructor's video lecture was being presented. It appeared as if she was sleeping. During a class meeting, the instructor asked Chris why she was so tired all of the time. Chris stated that she worked part time. She commented, "I am tired when I get home from work. Sometimes I don't feel like going to the computer lab or to school the next morning."

It appeared that Chris was too exhausted from her part-time job to attend class and to do her homework, which could explain why she was falling behind in her work. Chris indicated that her hours changed from week to week and that sometimes she had to work until the store closed. Chris also stated that she spent a lot of time with her boyfriend; this also may have been a contributing factor to her lack of progress in the course. What was evident in the above observation was that Chris had a low rate of attendance in class. Further, the researcher noted that she exhibited the same behavior that she claimed resulted in her expulsion from her former high school. Normally, in a distance education setting, this would not be a problem because attendance records are not taken. However, students would still be required to submit their assignments on time, which seemed to be a problem for Chris. In this study, the students were observed in a

unique classroom setting where they were scheduled by time and location to participate in the class. Therefore, the researcher examined student attendance as a possible factor, which could have an impact on their performance in class.

Previous Learning Experience

During the students first class meeting (January 15, 1999), the instructor asked them if they had any previous experience using the Internet and library resources such as the online catalog. Chris was a little concerned that her previous library experience in high school would hinder her performance in the college course because the course content focused on library research. Chris stated that she seldom used the library in high school and when she did, the librarian always found the information for her. In fact, they were not allowed to search the online catalog by themselves. Having been a librarian, the instructor was surprised by Chris' comment. She never knew that students library access in the high school setting was restricted. In college, students are encouraged to become independent library users. The librarian did not help the student until assistance was requested. Students had the freedom to use any and all of the resources that were available to them.

However, during one discussion, Chris indicated that she had previous experience using computers and was familiar with the World Wide Web (WWW). She also had access and used America Online (AOL), an Internet service used to access the WWW, at her aunt's, her boyfriend's house, and at her job. Chris commented that she used AOL all of the time to surf the WWW. She expressed that it was really easy to use.

Chris felt very comfortable volunteering for class activities that focused on strategies for searching the WWW. She also did very well on her first three assignments which focused on using email and the World Wide Web (see Appendix B). During one class meeting in the computer lab, Chris even volunteered to demonstrate the use of the online catalog. Chris' willingness to volunteer for this activity was unusual considering her prior comments regarding her library experience in high school.

Self-Confidence

Chris did not fit the student profile as described in the research literature of a low-achiever (Donmoyer & Kos, 1993; Wells, 1990). In the first five weeks of the course, Chris demonstrated a great deal of confidence to achieve in the course. She was never afraid to ask questions or to admit when she did not understand. Mr. Smith stated that Chris would not hesitate to walk over to the VCR and rewind it if she did not understand what the instructor was talking about.

Chris had high expectations that she would do a good job in the course. When asked about her expectations at the beginning of the course, she responded:

I really want to get a good grade in my first college course. My experience on the Internet before this was just searching. I felt comfortable. I felt that I would do a good job in the beginning because I knew how to use email and I was familiar with AOL, but it was really hard. I really needed a lot of help. I did really good in school before I was sent to Silver State. I just had some problems that I don't want to discuss.

For a while, I didn't think that I was going to finish this course, but the instructor and the facilitator wouldn't let me give up.

Chris also had aspirations to attend college upon graduation from high school. She stated that she was working part time so that she could save enough money to enroll in the community college.

High School Learning Environment

Course Schedule

As a senior in high school, Chris was only required to take one course in the second six-week semester of high school. This created a gap in time for which she had to wait for the distance education class to begin. For example, Chris' course at Silver State started at 10:15 a.m., which was third hour. In order for her to meet with the distance education class, which met on Fridays after school at 12:30 p.m., she would have to stay at school for an additional 1 ½ hour. Impatient, Chris would leave campus and would not return to attend the distance education class.

During a class meeting on the college campus, the instructor asked Chris if she was having any problems with her schedule. Chris replied:

Our new school quarter starts next week. I will only have to take one class at school. I am so glad. I won't have to stay here all day like the other students.

Instructor: Are you going to come to this class and stay with the group?

Chris looked at the instructor with doubt in her eyes. She nodded her head, yes and said, "I will also keep in touch with you guys on email."

On several occasions, Chris did make an attempt to join her classmates at the college. On one Friday afternoon, for example, all three students arrived on the college campus except for Chris. Vivica, her classmate in the study, stated that Chris was

planning to attend class but that she had missed the bus. Chris would be arriving later to join the group. After about one hour, Chris arrived looking very upset. She explained to the instructor that she had to call her boyfriend to come and pick her up because her classmates had left her behind at Silver State, and that she did not have any other way to get to the campus.

During a conversation with Mr. Smith, the instructor found out that Chris had enrolled in another class at a local vocational high school along with her other two classes (Silver State and distance education). Being enrolled in an additional course may have been another reason why Chris was missing so many classes. During a visit to the high school campus computer lab (week 9), the instructor asked the students if they had seen Chris. Dell, another classmate in the study, indicated that she saw Chris at the vocational school sometimes, but she really did not see her on campus that much anymore. Dell also stated that she would call Chris to check on her. Vivica stated that she would check to see if Chris wanted to meet with her during fourth hour so that she could help her catch up on her late assignments and show her how to connect to the Internet in the computer lab. However, this meeting never occurred. Furthermore, the instructor sent Chris three email messages but received no reply.

When the instructor did not hear from a student in a distance education class, especially after several attempts at contacting them via email, she assumed that the student had dropped the class or had fallen behind. This was one of the many challenges in distance education, because it was difficult to reach out to the student and ascertain the problem. In addition, because there was little face-to-face interaction, it was very easy to

lose students in a distance education setting. However, the case with Chris was different. She was not learning in a “true” distance learning situation. She was not located in a remote location away from the instructor or her classmates. In fact, she had face-to-face interaction with her classmates in the study, to the facilitator, and to the instructor in which to communicate with on a regular basis. It was difficult to understand why Chris failed to communicate with the instructor to explain her reason for not attending class. One possible explanation was that Chris may have been too embarrassed to communicate with the instructor because of her inappropriate behavior and lack of performance in class.

Limited Access to Technology

In the first week of the course, the researcher had a feeling that the limited number of computers in the high school computer lab and the limited amount of Internet access would pose a problem for the students in the study. This situation appeared especially frustrating for Chris who always seemed to be constrained by not having enough time to spend on her class work. Like her classmates in the study, Chris had to share a computer with someone else because there were not enough computers available for each student to use. It was interesting to observe how the students managed to cooperatively share the computers so that each one could get some time to practice. In one class meeting (week 4), for example, Chris was observed working with Vivica at a computer station. The instructor’s video lecture was also being presented at this time. Vivica would take notes while Chris used the computer to follow along with the instructor as she presented online demonstrations for searching the World Wide Web. After approximately ten to

fifteen minutes Chris exchanged seats with Vivica, allowing Vivica to use the computer while Chris took notes.

Limited access to computers really posed a problem for Chris early in the semester, especially when she scheduled time outside of class to use the high school computer lab, only to find that there were no computers available to use. She explained,

Man, I can't believe that we have to share these computers all of the time. I can never get my homework done in here. Even if I stay later, there is always someone using the Internet. That's why I don't like coming to the lab. I mean, don't get me wrong. I like my classmates, but sometimes I just like working by myself. I've got other things to do. I have to go to work and still finish my homework in my other class. (4th week field notes)

Chris' comment on her frustration of not having access to a computer foreshadows the overwhelming difficulty of balancing her course work and other responsibilities that she had. Thus, not having access to a computer could further delay Chris' lack of progress in the class. Usually, in distance education classes, it is stressed that all students who enroll have access to a computer at home. However, that is not always possible. Therefore, students like the ones in the study, schedule time in the computer lab or another location to complete their assignments for the distance education course. While access was a compounding problem for Chris at the beginning of the course, this was alleviated by moving the students to the college computer lab.

Outside Influences

Part-Time Employment

One of the outside influences apparent in this study was students working while enrolled in school. In this case, Chris was employed part-time at a fast food restaurant.

Her work schedule varied from week to week, which made it difficult for her to schedule time for homework. The researcher suspected that she may have been working the evening shift because she had such a difficult time getting up in the morning to attend class. On one occasion (week 9), the instructor approached Chris in the college computer lab to find out why she was missing so many classes. She asked Chris if she had lost interest in the course. Chris indicated that she had not lost interest in the class but that her job made her feel really tired:

When I get off work, I'm really tired. Sometimes I don't feel like going to the college lab, and I don't feel like going over to my aunt's house to use her computer. I can't use my boyfriend's now because I messed it up when I tried to install Netscape. I also have school work to do at the vocational school. Sometimes, I don't feel like going to class, either. I just like to sleep, get up, and go to work, and spend time with my boyfriend. I will be so glad to graduate.

It appeared that Chris had a difficult time balancing her employment with school work. Her response to the instructor's questions indicated that working while enrolled in school contributed to her lack of energy, motivation, class attendance and participation, and her academic performance. Mr. Smith stated that there were several times when Chris arrived to class either unprepared or too exhausted to pay attention in class. During one video observation (week 10), the researcher watched again, as Chris laid her head down on the desk and closed her eyes while the video lecture was being presented. The students turned towards Chris and began to laugh. The researcher waited to see if anyone else began to nod off, but they continued to watch the lecture, ignoring her.

Perhaps Chris' behavior would be normal under some circumstances, especially if she had been watching the video for a long period of time. The instructor had been told in

the past by other students enrolled in her distance education class as well as other students who had taken other video-based distance education classes, that the videos had a tendency to put them to sleep after watching them nonstop for about half an hour. However, based on the researcher's observation of Chris in the video, she fell asleep shortly after the video begun.

Although Chris continued to fall asleep in class, she made an effort to attend. Chris could have easily made the decision to stay at home on any day of the week or just drop out. She continued to stay, which could have been an indication that Chris had the desire to succeed in the course. Further, Chris had already stated that she performed well at her former high school. Thus, to her, taking the course might have been a way of proving to herself that she had what it took to perform at the college level.

Distance Education Learning Experience

Classroom Culture

After approximately 10 weeks of class, the students' attitude began to change towards Chris. Field notes indicate that students had a tendency to exclude Chris from their group because of her lack of participation in the class activities. Chris had been absent six times from the class and had fallen behind in her work. During a class meeting in the college computer lab, Chris had asked for help from her classmates because she had been absent the previous class. She stated that she did not understand what the instructor was talking about in the video lecture nor could she remember how to create a file and save messages in email. Vivica, who normally assisted her classmates when they asked for help, told Chris that she did not know the procedures and to ask Marvin,

another classmate in the study. Chris looked towards Marvin but did not ask for assistance. Instead, she got up and walked over to the lab assistant and asked for help. Collins & Green (1992) claim that the roles and relationships that students establish in the classroom influence what opportunities students have to learn and how the opportunities will be accomplished. In Chris' case, it appeared as if her exclusion from the group may have limited her opportunities to learn within the group.

During another classroom observation (week 11), Chris was seen distracting her classmates while they were watching the video lecture. The facilitator was not in the classroom at the time. Chris pretended to snore and immediately stopped as the students pointed towards the video camera. Marvin told Chris that her snores were caught on video. The students began to laugh. Chris responded by saying, "I didn't mean anything. I'm just really tired."

It appeared that Chris' behavior may have been due to her frustration of not being able to catch up in class. She was not paying any attention to the video lecture, and instead of remaining quiet and allowing her classmates to view the video lecture, she may have decided to distract them by pretending to snore.

Learner Support System

Field notes and interview responses were examined by the researcher to determine what kind of support, the community college offered to the students. In Chris' case, technology support played a very important role in her progress. When asked about support from the college, Chris stated that the college provided support with its computers and the library. The community college offered Chris better access to

computers than the high school computer lab. During a class meeting at the college computer lab (week 6), the instructor stopped by the lab to check on the students. She observed Chris as she sat at a computer workstation working independently. Her classmates sat nearby using individual computers. It was unusual for Chris, as well as her classmates, to have their own computer because they had to share computers in the high school computer lab.

Chris thanked the instructor for giving her the opportunity to use the college's computer lab to catch up on her assignments. She stated that having access to a computer made a big difference in the amount of time that she was able to dedicate to her class assignments. Chris also told the instructor that she was going to schedule more time outside of class because the lab stayed open until 10:00 p.m. The instructor nodded her head to show her approval for the effort that Chris was making to complete her work.

Limited technical support provided by the community college posed another potential problem for Chris. In the first week of the course, Chris applied for an Internet account through the college. The Internet account enabled her to use her home computer to connect to the Internet. However, Chris claimed that she experienced technical difficulties when she tried to install the software:

I had trouble with setting up the community college software so that I could access Pine and Netscape from my boyfriend's house. I made three trips to the computer lab at the college campus before getting the correct information I still couldn't get it installed correctly.

Chris indicated that she contacted the college's technical support to obtain assistance. Yet, no one returned her phone calls. As a result, Mr. Smith agreed to stop by

Chris' house to help her install the software that allowed her to connect to the Internet. After two unsuccessful attempts, the facilitator gave up. He could not ascertain the problem. Furthermore, the college's technical support never resolved Chris's problem. Eventually, she gave up trying to contact them. These events suggested that not having access to the Internet at home posed another potential obstacle for Chris.

At one point, the instructor felt compelled to help Chris by trying to solve the problem with her home computer. She pondered whether assisting Chris at her home would interfere as her role as the researcher. Would the instructor's intervention have a direct influence on the outcome of Chris' progress in the course? Would she drive to Pahrump or Laughlin to assist one of the other students in the course? Probably not. Given the proximity of this group of students, it was difficult to limit personal intervention. However, in this case, the instructor thought it best for the facilitator to assist Chris because she did not want to get into a habit of playing the role of technical support for other students in the study who may have needed assistance.

Although Chris did not own a computer, she had made arrangements to use her aunt's and her boyfriend's computer. Yet, according to Chris, her aunt would not allow her to use the computer when she needed it. In a conversation with the instructor, Chris expressed her frustration of not being able to use her aunt's computer to work on her class assignments:

Chris: My aunt has AOL but she trips sometimes when I ask to use her computer.

Instructor: Does she know that you are taking a college course?

Chris: *Yes, but she still gets an attitude.*

When asked in an interview if the family was able to offer support in the course, Chris indicated that she received minimal support from her family. Neither Chris' aunt nor her boyfriend knew how to use the Internet.

Chris' comments indicated that she may have had a conflict with her aunt. This would explain why her aunt had an attitude with her. Overall, Chris' relationship with her family is unclear and the level of support provided by her boyfriend to her was uncertain. Clearly, not having access to a computer at home created another obstacle for Chris.

Summary

In summary, Chris started off in the course as a self-directed learner. Initially, she demonstrated a great deal of independence and required very little assistance with her course work from the instructor or the facilitator. She also had high expectations in her ability to perform well. Factors such as part-time employment, physical fatigue, course scheduling, additional course work, and limited access to technology, placed constraints on Chris. Kember (1990) states that certain background factors and outside influences will influence how a student progresses in a distance education course. Such factors, obviously had a negative influence on Chris' lack of progress in the course.

Chris began to miss class more frequently. Noticing Chris' lack of attendance and lack of participation in class, her classmates began to isolate her from the group. Collins & Green (1992) claim that the students ability to adapt to the culture of the classroom community will have an affect on their progress. This appeared to be true in Chris' learning situation.

However, in spite of all of Chris' obstacles, she was a high school student who successfully completed a college course. According to Kember (1990), Murray and Heil (1997), and Willis (1994), a student who is challenged with as many obstacles as Chris, usually does not succeed in a distance education course. Further, Nieto (1990) claims that factors such as limited access to technology in the high school environment can also hinder a student's performance. Yet, having access to the community college computer lab and other resources provided Chris with the access to technology needed to successfully complete the course.

Students Perceptions and Attitudes

Video-Based Distance Education: Advantages

While teaching in the college's distance education program for four years, and being evaluated by her students, the instructor was able to identify some of the main advantages and disadvantages to learning by prerecorded videos. Most of these were outlined in Chapter II. However, it was important to question what the students in this study felt were the advantages and disadvantages of learning through prerecorded videos. In some cases, it was difficult to analyze student behavior through video taped observations because there was not a great deal of interaction among the students. It appeared as if videotaping the students may have influenced their behavior. In most cases, the students spent a half hour to an hour staring at a TV screen. At times, there was note taking, and intermittent discussions among the students, and the facilitator if he was present during the observation. Thus, the researcher relied mostly on the student

interviews as the main source of data to determine what impact video instruction had on the students learning.

In an interview, Chris revealed that the most important element of the prerecorded videos was having the flexibility to view course lectures at times and locations that were conducive to her schedule, and the ability to rewind lectures to review content and to reinforce comprehension:

One of the advantages of video instruction is that you have the flexibility to view the lectures at a time that is convenient to your life style. I know that I did not take advantage of the opportunities to view the videos at home, but it was nice to know that I could watch channel 10 or record the lectures if I wanted to. I could even go to the library and watch them or just check them out. I tried watching them in the library, but it was too quiet. I never checked the videos out either. Sometimes I would go to the high school computer lab and watch them by myself. The facilitator had all of the copies.

Initially, Chris had a difficult time understanding what the instructor was talking about during the video lecture until she logged onto her computer and began to practice some of the online demonstrations. She revealed that being able to work on the computer while viewing the lecture in the classroom was extremely effective. Chris also felt more comfortable taking a test in the distance education class as opposed to the classroom where she had a tendency to freeze up before the test. She especially liked being able to take her final exam home to complete.

Chris' assessment of the prerecorded videos was an indication that this type of technology could be beneficial in her situation because of the flexibility that it provided. If Chris missed class, she could arrange to view the video lecture at a time that was conducive to her schedule. On the other hand, even though Chris claimed that she

benefitted from video instruction, she still fell behind in class and her test scores remained low, which was an indication that she did not have enough motivation to put forth the additional time needed to catch up on her assignments.

Video-Based Distance Education: Disadvantages

Chris revealed in the interview that one of the disadvantages of the distance education course was that the instructor was not present in the classroom to answer her questions or to provide immediate feedback on course assignments. Sometimes Chris would submit her assignment late because she had to wait for the instructor to answer her questions via email regarding a homework assignment. Chris also felt that she was not able to compare her test scores with other students in the distance education course. She stated that she wanted to know how the other students were doing on their assignments. Chris may have been curious to know if anyone else was performing at the same level that she was in class. Usually, the instructor submitted the individual grades to the students instead of emailing the range of test scores to the entire class.

Chris' response was an indication that she had not made the full adjustment to learning without the instructor's presence in the classroom. Submitting late assignments may have been an indication that Chris was hesitant to submit her assignments via email without the instructor's approval of her work. This also indicated a change in Chris' learner profile. In the beginning, Chris was categorized as a self-confident, self-directed learner who needed minimal assistance from the instructor and facilitator and now, she lacked self-confidence and needed to have constant feedback from the instructor before she could continue to do her work.

This observation also made the researcher realize that the usual distance placed between the instructor and the student in a distance education course was not evidenced in this study because a great deal of face-to-face interaction took place in the classroom. Typically, in a distance education class, access to this amount of face-to-face instructor interaction would not be possible because so many of the students live in different locations.

Instructor's Course Materials

In addition to the video lectures that were made available to the students, other course materials such as handouts, course assignments, and links to other library resources were made available to them via the instructor's web page. However, because the videos were prerecorded, changes could not be made to them to reflect the current course content that was presented in class. However, the instructor found that making these changes to the course materials on her web page created frustration among the students because the videos did not reflect those same changes. The instructor explained to the students in the entire class that because of cost constraints, she was unable to update the videos. Therefore, the revised instructions for the assignments were only reflected on the instructor's web page.

Chris, who did not remember this discussion, which took place at the beginning of the course, got very confused when she discovered that the video lectures did not match the assignments that she was working on. She also stated that some of the web sites, including the instructor's home page that were presented in the video looked completely

different when she accessed them on the computer. Again, the instructor explained to Chris the reason for the inconsistencies.

Chris' complaint about the course materials was a common concern among other students enrolled in the course. Some students had difficulty trying to follow the instructions on the printed assignments when the instructions were different in the videos. In contrast, the instructor had several students in the class who were not part of the study who commented that they did not find it difficult following the instructions nor completing assignments that were not outlined in the video.

College Course Work

The college course was challenging for Chris. During a class meeting on the college campus (week 12), Chris complained to the instructor:

We sure do have a lot of homework in this class. Can't we wait and do our stuff in class like our other classes? I never have time to do my work at home. I never have to take work home in my other classes. I am glad that I only have one to take now. This stuff is kind of hard.

Based on Chris' response, it could be possible that she was not used to being in a class which demanded that time be spent outside of the classroom to complete course assignments. Her comment also posed a question as to why she did not have to take her work home and why she was given the opportunity to complete all of her course work in class. In most cases, instructors utilized the class time for delivering instruction and then assigned the course work to be done outside of class.

Upon reviewing Chris' performance in class, it was apparent that the college course was difficult for her. Her scores were very low on assignments four through seven.

On assignment four, Chris scored 55 out of 100 points; assignment five, 65/100; assignment six, 65/100; and assignment seven, 50/80 points (see Appendix B.)

Furthermore, Chris' scores may have been another indication that she was not spending enough time on her course work.

Based on the field notes from observations, interviews, and test scores, it was evident that Chris was not well prepared to handle the demands of the course; however, she completed the course. In fact, Chris revealed her plans to enroll in another college course after she graduated from high school.

I really do like school and when I really focus, I get really good grades. I am going to take another course at the community college when I graduate from Silver State. This is my last semester. I am going to take a class at the college in the Fall, but I am going to enroll in the classroom. I know that I have to be prepared to handle the amount of course work in college. However, I do feel confident in taking another college course.

Student Motivation

The researcher noticed a major change in the students' behavior on the college campus, especially for Chris. It was as if the experience of feeling and being a college freshman had a positive influence on Chris' motivation in the course. Chris, like her classmates appeared to be more outgoing and motivated when she was on the college campus. It was as if she was aware that being on the college campus meant that she had to appear more "collegiate." For example, during the students' first class visit to the college campus (week 5), I noticed a change in Chris' demeanor. She was dressed a little more conservatively and carried her notebook with her, which was something that she normally did not have with her during class meetings on the high school campus. Chris

also seemed to be more a little more focused on her work in the college computer lab than in the high school computer lab where she had a tendency to “goof off” in class.

When Chris was asked to describe her most rewarding experience in the college distance education course, she revealed that it was being a college student and learning how to do library research. She stated that she knew a lot more now than she did in high school. Chris also revealed that she was glad that had been given the opportunity to take the college course and to experience being a real college freshman on a campus, where there were no class bells to be heard.

Although Chris was not sure of what her final grade was going to be for the course, she was confident that she passed. Chris was also glad that the instructor had given her a chance:

I am glad that I got the opportunity to take this course. I got to go to the college and feel like a real freshman. I could use the computer lab whenever I wanted. I could even take a friend with me, too. My friend wants to know how she can take a college course and be in high school at the same time.

Before, I did not look forward to going to class, but now I do, especially when we get to go to the college campus. I really like it here. There are so many computers. Do students really have all of this freedom? There are no class bells or anything. This is great.

Overall, Chris felt that she could have done a lot better in the course if she had not had so many things going on in her life. In fact, she was looking forward to graduation and enrolling in another college course. However, submitting late assignments continued to be a problem for Chris. Furthermore, her participation in class decreased, her attendance decreased, and her test scores began to drop (See Appendix B). Physical fatigue also became a factor. More and more, it became a challenge for Chris to get motivated enough

to schedule study time to do her homework. Chris also stated that she did not feel like going to the college lab, to her aunt's, or to her boyfriend's house to use their computer. However, by the final two weeks of the semester, Chris had completed all of her assignments and was getting prepared to take the final examination.

Student Outcomes

It was evident in the study that Chris was not performing academically at her maximum potential. The data indicated that she was faced with too many demands which monopolized her time. In comparison to the other college students enrolled in the course, as well as her classmates in the study, Chris was average in class. Out of 840 possible points, Chris scored 620 points (74%) which resulted in a C for her final grade in the college distance education course.

Although Chris did not receive a high grade in class, she still felt that she learned a great deal in the course. When Chris was asked if she was able to apply what she had learned in the video-based distance education course in another course, she responded:

What I have learned in this course, I have not had a need to use it yet in other courses. However, I feel really good about going to the public library now to do research. I do know that the Internet is more helpful to me now than before. I am able to use resources that I did not even know were there.

Based on Chris' response, it was apparent that she benefitted from her first experience in a college course. Although she missed several classes and fell behind in her course work, her ability to apply the library research skills obtained in the course illustrated that she was able to retain and apply enough of her knowledge in a different learning situation.

Summary

Lack of attendance and participation in class was a contributing factor in Chris' lack of progress in the college distance education course. Course scheduling also made it difficult for Chris. It also appeared as if physical fatigue due to working part-time along with taking an additional course contributed to Chris's low attendance, lack of motivation, and slow progress in the course. Video-based distance education and college support enabled Chris to learn at her own pace but had a minimal influence on her overall progress in the college distance education course.

Field note and interview data suggested that Chris had too many responsibilities to maintain a high level of academic achievement. The additional responsibilities contributed to her poor attendance and low participation in class. Chris also struggled to balance the demands of a part-time job and additional school work while taking the distance education course.

Student Two: Marvin

Marvin, a White male, was a junior at Silver State High School and had a 2.2 GPA at the beginning of the Fall 1998 semester. At the age of 16, he was expelled from his former high school in Spring 1998 and was transferred to Silver State in the Fall 1998. Marvin had previous computer experience, knowledge of the Internet and World Wide Web. He also had a VCR and computer at home. His parents owned a construction business and earned \$120,000 annually (see Table 3). Marvin had one brother and one sister. He also had a cousin enrolled at the local community college.

In the beginning of the course, Marvin appeared to be the shy member of the group. Although he appeared shy around his classmates, he was very inquisitive, and never hesitated to ask the instructor a question. Sometimes, he would begin his question with, "I know this might be a stupid question, but...." Then, he would proceed with the question. Even though Marvin felt that he was not asking intelligent questions, the instructor felt differently and told him so.

Marvin seemed to get along with everyone. As he became more comfortable with his classmates, his sense of humor began to emerge. Initially, the instructor questioned whether there would be any social interaction between the different ethnic groups and between gender. However, it appeared as if all of the students got along well with one another, except on some occasions when Marvin and Jack competed for attention.

Student Profile/Learner Characteristics

Absenteeism

As the researcher continued to observe the students in the study, she noticed after approximately eight weeks that Marvin had a tendency to be absent during class meetings on the high school campus. At that point, he had missed three classes. As previously noted, the students were being transported to the college because of the limited number of computers to use in the high school computer lab. However, they were still scheduled to meet during first period, every Tuesday morning in the high school computer lab, to work on their assignments. The instructor called it lab hour, since all of the students had class in the lab at that time.

During a class meeting on the college campus (week 8), the instructor approached Marvin and jokingly asked him why he did not like meeting with his classmates on the high school campus. Marvin stated that he did not like going to school at Silver State because the students were always fighting:

There are a lot of gang members at our school. They are always starting fights with other students. I can't wait to get out of here. I don't like coming to school any more. You can't learn. There are so many distractions.

Marvin's attitude towards high school may explain why he missed classes in the distance education class on the high school campus. Student records indicated that Marvin was absent more during class meetings on the high school campus than during class meetings on the college campus (see Table 4.3). He missed a total of five out of 15 classes held on the high school campus.

Previous Learning Experience

The instructor had the opportunity to talk with Marvin during their first class meeting. In the discussion, the instructor found out that Marvin had previous experience using computers and was familiar with the World Wide Web (WWW). He also told the instructor that he used the WWW at school and at home. Marvin commented that he usually surfed the World Wide Web to find computer games to play. Sometimes he searched Yahoo, a subject directory, to locate resources on the WWW. The instructor could tell by talking to Marvin that he really enjoyed using the World Wide Web. He even used it to do school projects at his former high school. His comment was also a perfect lead in for the instructor to discuss the course. She told him that the entire class

would be using the WWW and other library tools to do research for a class project.

Marvin replied, "This course is going to be easy."

Although he had a shy demeanor about him, Marvin appeared very animated when he talked to the instructor. By the end of their conversation, the instructor knew that Marvin liked history, had considered learning more about the construction business so that he could help his mom, and that he really liked skateboarding with his friends. He stated that he could not wait to show the instructor all of the skateboarding sites on the WWW.

Upon reviewing Marvin's scores, the instructor found that he did an excellent job on his class assignments, especially the ones that focused on how to search the World Wide Web. The instructor felt that his previous learning experience had really paid off because he scored an A or a 100% on assignments two and three, which focused on how to use the WWW (see Appendix B).

Self-Confidence

From the beginning, Marvin exhibited a high level of self-confidence. For example, during the first class meeting when the instructor asked the students if they had any concerns about the course, Marvin commented that he did not feel as if he would have a problem. He stated that he felt very confident because the facilitator kept telling him how easy it would be for him to succeed in the course. Further, he felt that he had the academic and computer skills needed to perform well because of his previous academic achievement in his former highschool. He commented:

I did really good in school before I was transferred to Silver State High School.

I just had some problems that I don't want to discuss. I just wasn't interested in going to school. I kept getting distracted. I used the computer a lot at my other school. My mother has a computer, too. I use it to go on the World Wide Web.

Marvin admitted that he had some problems in school. However, he made it clear that he performed well when he applied himself. Based on his references to his academic achievement in his former school as well as his statement regarding his ability to perform well in the course, Marvin was not lacking in self-confidence.

Upon reviewing some of Marvin's interview responses, the researcher found that Marvin had aspirations to attend college upon graduation from high school. Marvin stated that he planned to enroll in the Culinary Arts program at the community college. Thus, it was important for him to do well in class. Marvin revealed that even though he did not set any goals, he really tried to do his work and to stay focused on the class. Furthermore, he wanted to complete the course so that he could get a head start on college since he messed up in high school.

Marvin frequently requested feedback on his class performance. During a class meeting at the college campus (week 5), the instructor stopped by to see how the students were doing. Marvin insisted that she check his homework for errors before he submitted it. The instructor reviewed his work and confirmed that he had done a good job. In fact, upon reflection, the instructor was really impressed with the types of WWW resources that he had selected. For example, several of the resources that he had located contained a list of references as well as links to the author's credentials.

High School Learning Environment

Limited Access to Technology

One of the obstacles that constrained students' lack of progress in this study was lack of access to computers in the high school computer lab. The limited number of computers reduced the amount of time Marvin was able to work on his class assignments in the course. As previously noted, there were only two computers in the high school computer lab, which provided access to the Internet. Marvin dealt with this situation by sharing a computer with one or two of his classmates. There were times when Marvin became extremely frustrated over the lack of access to technology resources in the computer lab. He felt that Silver State's computer lab was inadequate and did not meet his technological needs.

The instructor recalled a conversation that she had with Marvin, during the third week of class. She found out that Marvin had been transferred from a high school located in an affluent neighborhood. The high school also contained a computer lab, which was equipped with the latest technology and provided access to the Internet on all computers. Silver State High School, on the other hand, was the complete opposite. It was located in the inner city with a large number of students from low-income home environments and had a computer lab filled with out-dated computers, with very few computers accessible for students to use.

During a conversation with the facilitator in the high school computer lab, Marvin expressed his frustration of not being able to access the Internet because of technical difficulties.

He commented:

This lab is a joke. My other school had a "fly" lab. We had all of the latest technology. These people don't even know how to set up a lab. Everything runs so slow... like an old Ford. I can't believe that we have to share a computer. When can we go to the college? They have all kinds of computers. I go along with my cousin sometimes. I could stay in there for hours.

Marvin's response illustrated his frustration at being deprived of certain amenities that his former school provided. It also revealed his desire to be a part of an educational environment, which offered the amenities to which he was accustomed.

Outside Influences

Social Commitments

One factor apparent in this study was that Marvin seemed to delay doing his homework on the weekends to be with his friends. He commented:

To be honest, it's hard watching the video on the weekend. I am having too much fun. I wanted to skateboard with my friends. I did have trouble finding time to sit down and research the net. I often seemed to put my assignment on the back burner, telling myself I would get to them later.

While Marvin's interview response was not adequate data to determine if it was an obstacle in his progress, the researcher concluded that Marvin's decision to be with his friends, as opposed to utilizing the time to work on his class assignments, was a factor that contributed to his lack of progress to a certain degree. There were a couple of times when Marvin had not been absent from class, but submitted his assignments late.

Distance Education Learning Experience

Classroom Culture

To determine what role Marvin played in the classroom, the researcher examined field notes from observations. From the very beginning to the end of the 15-week semester, Marvin continued to be a leader and an active participant in the classroom. He was the kind of student that the instructor enjoyed having in class. Students also appeared to follow his lead in the classroom. His support of his classmates exemplified his willingness to help them progress in the course. During class, Marvin was usually the first person to raise his hand when the facilitator asked someone to conduct the computer demonstrations. When the facilitator asked for a volunteer to demonstrate Pine email and to activate Internet accounts, Marvin volunteered to go first. Another student followed Marvin's lead.

Marvin was often seen lending a helping hand to classmates when they needed help. He was observed on several occasions assisting his classmates with their assignments, and helping them to practice searching for information via the WWW. In one classroom observation, Marvin was seen in the college computer lab (week 5) helping Chris, who was having difficulty with a class assignment:

Chris: I am confused. I think I did my assignment wrong. The facilitator showed me how to do it. I used Yahoo for Part A & B. Vivica did the same thing.

To assist Chris, Marvin moved towards her computer to access Yahoo. He displayed Yahoo and showed some of the features which were designed to help a searcher to browse through the subject categories without having to search Yahoo by entering

keywords. Chris took notes while Marvin continued the demonstration. After approximately 15 minutes, Marvin returned to his computer. However, he continued to glance over at Chris from time to time to make sure that she was not having a problem.

Students also relied on Marvin to make sure that they were viewing the correct video lectures. During one classroom observation on the college campus (week 6), Vivica asked Marvin if they had previously viewed a segment of the video lecture that was being presented. Marvin watched the video for a moment and confirmed that the lecture had been previously shown. He commented that he remembered the outfit and hair style that the instructor was wearing during the lecture, and that a change in the instructor's outfit meant that a new lecture was being presented.

The social interaction that occurred after week four between Marvin and his classmates represented a shift in the group dynamics. From this point on, a sense of community was being established in the classroom through Marvin's leadership and willingness to reach out to his classmates, and their response of acting as a group. For example, during the video lectures, the students seemed to lean towards Marvin for direction. They would ask him questions such as, "What assignment are we on in the video? Do you understand what Ms. Flowers' is talking about? How do I get into the online catalog?" because he appeared to know more about what lecture topics had been presented in the videos. It also seemed as if the students designated Marvin as the video coordinator for the group. For example, during several class meetings Marvin was observed setting up the video and rewinding certain segments for the students to review.

On occasion, he identified key points about the lectures to his classmates that were addressed in the videos.

During the 15-week semester, the instructor visited the students almost weekly on both the high school and the college campus; yet, Marvin still felt that one of the biggest obstacles in the course was not being able to interact face-to-face with the instructor and other students who were enrolled in the course. He commented:

Having to wait a day for a response to a particular question was at times frustrating. However, I did overcome this obstacle by working with one of my classmates throughout the course.

Normally in a distance education class, the instructor seldom met with the students unless they requested an appointment to meet with her on the college campus. Most of the instructor/student interaction was done via email or by phone. However, during the study, two informal class meetings were scheduled on the college campus for the entire class to address any questions or concerns that they had about the course. Marvin was the only one from the study group who attended the first meeting. Two other students not participating in the study also showed up. The students and the instructor sat in a semi-circle at one of the computer workstations in the lab. After their brief introductions, the students sat at their own computer so that the instructor could assist them with their assignments. During that time, minimal interaction between the three students occurred except that they would occasionally glance at each other from time to time. This kind of interaction was normal with the distance education students during class meetings, because they did not get the opportunity to personally meet each other

unless they attended the distance education orientation, or made arrangements via email to meet.

The second meeting was held on the college campus during the 12th week of the semester. Marvin was the only student who attended. The students in the instructor's distance education class usually did not attend these additional class meetings because they were not mandatory. However, Marvin looked forward to the informal class meetings and stated that the meetings gave him a chance to interact with the instructor face-to-face and to get answers to his questions instead of having to wait for a response via email. Marvin's presence at the informal class meetings was an indication that he had the interest and motivation to be an active participant in class. Another conclusion is that he may have had more free time and less outside responsibility than his classmates such as Vivica and Chris, which allowed him to spend more of his time participating in class activities.

Email was used as a form of online communication in the course. Students used email to interact with the instructor, other students in the course, and to submit their course assignments. However, some students used email more than others. To determine how often Marvin used email, the researcher examined field notes and interview responses. She discovered that Marvin occasionally used email to communicate with the instructor and to submit his assignments. It also appeared as if Marvin communicated with his friends in the study on a regular basis. When asked to describe his reactions to communicating with the instructor and classmates via email, he replied:

It was different but kind of fun. I often looked forward to hearing from a particular classmate that I had just corresponded with. I mostly sent and received email messages from the guys in my group. It seemed that many other classmates were behind on homework and didn't know all that much about current assignments. I was glad to know that I was not the only one falling behind. However, I much prefer to interact with classmates in person.

Based on Marvin's response, the researcher believed that he was comfortable using email in the course. However, it seemed as if he communicated with his friends in the study more than he communicated with the other students in the class. It is important to note that at some point Marvin communicated with someone online to inquire about the course assignments. Judging by his comment, it appeared that he was somewhat glad to know that other students were performing at the same level that he was at that time.

Learner Support System

To determine if learner support was evidenced in the study, the researcher examined field notes from observations and interview responses. Several elements of the learner support system, which may have contributed to Marvin's progress in the course were identified. For example, Marvin revealed that having access to a variety of technology resources in the college computer lab, access to lab assistance, as well as the instructor had the greatest influence on his progress in the distance education course. During a class visit at the community college (week 6), the instructor met with the students in the electronic classroom to check on their progress. It was their second time on campus. The instructor approached Marvin first to see how he was doing. It was at that time that Marvin thanked the instructor for giving him the opportunity to use the college

computer lab. Marvin told her that he really liked having access to the variety of technology. He commented:

This is great. You guys have scanners and headphones to listen to music on the WWW, lots of printers, and a whole lot of computers! I don't have a car, but I can come up here with my cousin. This computer is a lot faster than the one I have at home and at Silver State.

When asked in an interview what kind of support the college provided, Marvin replied:

The college support is great. I can take full advantage of the computer lab, check out the videos in the library for a week if I wanted to, and the lab help is really friendly towards me.

Data indicated that the college played a critical support role in his progress in the course. The computer lab provided Marvin with the opportunity to utilize a variety of technology resources that he did not have access to, in the high school computer lab. There also appeared to be a noticeable change in Marvin's behavior. He seemed more relaxed when he was in the college computer lab. Marvin also appeared very excited as he discussed his plans to use the computer lab outside of class time. This change in environment, having access to a computer without having to share it with his classmates may have contributed to the change in Marvin's behavior.

Instructor Support

The instructor tried to assist the students as much as possible. In this study, the instructor actually spent more face-to-face time with the high school students in the classroom than she did with the other students enrolled in the distance education course. The instructor felt that they likely needed additional guidance to succeed in the course. In

terms of time online, however, the instructor spent more time online with the other students enrolled in the course than she did with the high school students.

In Marvin's case, he believed that the instructor made an effort to check on his progress and that she played a role in his academic performance in the course. When asked, "What do you believe attributed to your ability to complete this course?" Marvin stated that the instructor, his classmate, Vivica, and being able to use the computers at the community college when he wanted. Upon examining Marvin's response, the researcher concluded that three support mechanisms influenced his progress from the beginning to the end of the course: instructor support, classmate support, and college support.

In the course of the study, the researcher attempted to obtain information about each student's home environment. This task proved somewhat difficult to do without giving the students the impression that she was prying into their personal lives. Furthermore, she wanted the students to feel comfortable confiding in her without having to ask them questions.

The lack of family support appeared to be an obstacle for Marvin. In his interview, Marvin stated that he received no family support in the course, and although he had a computer at home, it was not always accessible to him. When asked if his family was able to offer support in the course, Marvin replied that his family played no role in the course, and that his sister at times prevented him from doing his homework:

I did my assignments by myself. One time my sister took the keyboard for a couple of days. That made me mad, because I couldn't do my homework. She spilled something on hers, but she is supposed to return it this weekend.

Although Marvin claimed that his family did not support him while enrolled in the course, there was not enough documentation to support his statement. Upon reflection, the researcher recalled two instances when Marvin stated that he had been grounded for misbehaving. There were also several times when Marvin expressed his anger towards his mother for not being around to spend time with him because she was too busy with the family's construction business. Thus, Marvin's response may have been a result of anger towards his parents, particularly his mother.

Kember (1990) states that the home environment can influence a student's progress in a distance education course. If the support is in place, the student is more than likely able to complete the course, if it is not, then he will probably drop out. However, in Marvin's case, he was still able to succeed without the support of his family.

Summary

In summary, Marvin did not fit the profile of a low-achiever (Donmoyer & Kos, 1993; Wells, 1990). He was self-confident and a student leader. Marvin believed that he had the ability to succeed in the course and proved it by performing well on his assignments. Although Marvin was characterized for the most part as a self-directed learner, it appeared that he was having a difficult time making the transition from the physical classroom to the distance education classroom without having the instructor's presence in the room. Further, his attendance at the informal class meeting may have been an indication that he was in need for more face-to-face interaction with the instructor and other students enrolled in the course.

The high school atmosphere and limited access to technology created obstacles for Marvin. According to the conceptual framework, these obstacles can drastically limit a student's performance in school (Nieto, 1990). However, with the support of the instructor, classmates, and the college, Marvin persevered. Kember (1990) states that outside influences may contribute to a student's lack of progress in the course. In Marvin's case, the outside influences appeared to be social commitments with his friends, which played a minor role in his decisions in timeliness of completing homework.

Student Perceptions and Attitudes

Video-Based Distance Education: Advantages

As noted earlier in the study, it appeared as if videotaping the students may have influenced their behavior. Thus, much of the researcher's data was taken from student interviews. Marvin was previously described as the video coordinator of the group. During the video lectures, Marvin paused and rewound segments of the video for his classmates to review and kept them up-to-date as to which video lectures had been shown. In an interview, Marvin revealed that he liked the flexibility that the videos offered. He felt that it was nice being able to watch the video as many times as he needed to, especially during the times when his classmates were talking during the lecture. Marvin stated that all he had to do was to press the rewind button on the remote control to review the missed portion of the lecture.

During one video observation (week 3), Marvin had an annoyed look on his face as he turned towards Chris and Dell who were talking during the lecture. Marvin told them to be quiet because he could not hear the video lecture. Dell and Chris covered their

mouths and continued laughing. Frustrated, Marvin walked over to the VCR and rewound the video. He had to rewind, and fast forward the video a couple of times before he located the correct section of the lecture that he had missed.

On occasion, Marvin took the videos home when he forgot to set the timer on his VCR or when he missed class. He stated that he wanted to move ahead and stay on top of his homework. Overall, Marvin believed that the prerecorded videos were an effective tool for delivering instruction in distance education. He explained:

My learning experience with video instruction proved to be very interesting. I liked having the ability to stop and rewind to a particular section of the tape that I didn't understand. It is kind of convenient to be able to pause and replay lectures so that you can get the vocabulary words and things. One of the greatest advantages is being able to control your learning. I could watch them according to my schedule.

These data suggested that Marvin benefitted from the videos. It appeared as if video instruction clearly created a learning environment where he could learn at a pace that was comfortable for him. This analysis supports the research literature which indicates that this method of learning can be effective for students such as Marvin, who need more time to comprehend the course work (Crooks, 1990; Willis, 1994).

Distance Education: Disadvantages

Although Marvin revealed that he benefitted from video instruction, he felt that it was an ineffective delivery method for students who lacked self-discipline. He stated that although he made an effort to take the videos home, he lacked the self-discipline to keep up with watching the tapes. Marvin also stated that one of the problems with watching the prerecorded videos was that it was hard to relocate certain sections when he stopped

following along. Further, it was difficult concentrating on the video lectures after a long period of time. Marvin commented that after approximately 10 to 15 minutes, he got very bored and distracted.

During one video observation (week 4) in the high school computer lab, all of the students began to look either sleepy or bored while watching the video lecture. They were sitting in chairs in a semi-circle, facing the television. The computers were positioned behind them. After approximately 15 minutes, all of the students moved closer to the computer table. In a matter of minutes, the students had positioned themselves so that their heads were resting in their hands, which were propped up on the computer table. The researcher could tell that they were beginning to drift and observed that some kind of interaction needed to take place to recapture their attention.

Marvin felt that another disadvantage of video instruction was not being able to ask the instructor questions during the lecture. He stated that it was difficult making the transition from the instructor's virtual presence in the video to her physical presence in the classroom. In the beginning of the course, he was reluctant to ask the instructor questions about the lecture when he saw her in person:

It was really strange seeing the instructor on TV and then talking to her face to face. At first, I was a little nervous to ask questions. I had to get used to her being on the video teaching and then showing up in person. I used to wonder if she would be wearing the same hair style when she showed up for class. That way I could tell her what I didn't understand on the video. You see, I remembered the lessons by what she was wearing.

Marvin's comments identified the difficulties that he was confronted with during the 15-week semester. Yet, he managed to overcome several of the obstacles. For

example, by the fourth week of class, Marvin began to feel comfortable interacting with the instructor. This was an indication that he was making the adjustment to the video personality image. Secondly, he developed a learning strategy where he was able to locate which video lectures had been shown on the video tape by identifying what the instructor was wearing at the time the video was being presented. This represented another transitional shift for Marvin as he attempted to develop a learning strategy to help him adapt to his present learning situation.

Earlier in the study, Marvin revealed that he seldom scheduled time for his homework because he wanted to spend time with his friends. In a class meeting, Marvin reported that he attempted to watch a video lesson at home. Marvin stated that he became extremely frustrated as he watched the video, because the instructor's instructions for the homework assignment were different from the instructions on her web page. He finally gave up trying to do his work and decided to wait until he got to class.

Marvin also sent the instructor an email message. He stated that he did not understand the instructions on the assignment and that they were different from the video. The instructor had to remind him that everyone was sent an email message at the beginning of the course instructing them to follow the instructions on her web page. He stated that he did not remember. Thus, the instructor reminded him again that the updated assignments were not reflected in the videos.

College Course Work

One of the challenges that the students faced in the study was trying to adjust to the demands of college course work. Marvin felt that the course was extremely

challenging. He stated that Silver State High School did not provide him with challenging course work, which may explain why he had such a difficult time handling the college course work. He commented:

The assignments really make you think. I thought this class was going to be easy like our other classes at Silver State. I thought I knew how to use the Internet, but there is a lot to it. There are a lot of assignments. It takes forever just to find one answer. My head starts to hurt. Sometimes I'm on the Internet for hours at home.

Marvin also felt that it was extremely challenging trying to balance both high school classes and the distance education class:

I think one of the disadvantages is that a high school student should take the course in the Summer instead of the school year. That way, they would have more time to study because they don't have their high school work to do at the same time.

Marvin's comments implied that the college course was more challenging than the classes at Silver State High School. Apparently the college course work was also difficult for Marvin to handle along with his regular school work. Yet, Marvin was able to persevere and succeed in the course. His grade on his assignments and final exam earned him an A for the course (see Appendix B). This finding was another indication that Marvin, whose very presence in Silver State High School characterized him as a low-achieving student, had the academic ability to perform well in the college course.

Based on the instructor's previous experience of working with high school students in the college distance education course, she knew that the amount of work and the academic level of the course may prove to be a challenge for the students. For that reason, she emailed the students in the study at least twice a week to check on their progress. Usually, the students responded to at least one of the instructor's email

messages during the week. However, most of the time, the students wanted to respond to the instructor in person. When they responded via email, their email message usually indicated that they needed help and wanted to meet with the instructor in person. The instructor also responded to all of the students in the course on a regular basis. Even if a student emailed her three times a week, she responded to each message usually within a 24-hour period or by the end of the same week.

Student Motivation

From the very beginning of the course, Marvin showed a great deal of initiative in class. He was an active participant in the classroom, supported his classmates, attended the informal class meetings, and usually submitted his homework assignments on time. In Marvin's interview, he revealed his desire to succeed in the course. He stated that his overall goal was to stay focused on the class and to get a good grade. He really wanted to complete the course so that he could get a head start on college. Marvin revealed that he had "messed up" in high school; thus, enrolling in college was a way for him to start over.

It was evident in Marvin's response, that he had the drive and determination to achieve his goal. He also recognized the fact that he was being given a second chance to change his academic performance, which was an indication that he wanted to prove to himself that he had the academic ability to succeed as a high school student, in his first college course.

Marvin also felt that the experience of being a college freshman and spending time on the college campus inspired him to do well in the course. In an interview, he described his most rewarding experience in the college distance education course:

Before I did not look forward to going to class, but now I do, especially when we get to go the college campus. I am looking forward to taking more college courses at the campus and through distance education. I really learned a lot in this class. I know I could've done better. I am only doing average right now.

I think that it will be a different experience not being a high school student at all. I like being on the college campus and walking into the computer lab whenever I want. No one bothers you. It's better than the high school.

Marvin's response illustrated his need to experience freedom to choose when and how to do his work. He enjoyed having the independence to go and come as he pleased without having to report to an "authority" figure. Marvin also had a higher attendance rate on the college campus than on the high school campus (see Table 4.3), which was an indication that he preferred to be in the college environment. Upon reflection, the instructor remembered some of her former high school students who were enrolled in her distance education course making similar statements. They, too, liked having the "freedom" that the college environment offered because they did not feel as if they were constantly being watched or spied on by other teachers on the campus.

Although data suggested that Marvin was a self-directed, self-motivated learner in the classroom, Marvin still found that it was very difficult trying to complete his homework. In an interview Marvin related that he preferred skateboarding with his friends. He also said that he would usually put his assignments on the "back burner," telling himself that he would get to them later. Sometimes he accomplished his task and

other times he did not. As a result of his decision to make his homework a low priority, several assignments were turned in late.

Marvin seemed to like working with Vivica. It appeared as if they had developed a rapport with each other. In fact, Marvin did not appear as motivated to do his work when Vivica or his other classmates were not in class. During a class session on the college campus (week 8), Marvin was the only student who had showed up for class. He stated that everyone else was absent from school. The instructor asked him if he felt uncomfortable being at the college by himself. He responded, "No." However, when the instructor came back to check on Marvin in the classroom, she found him asleep on the desk with the video lecture still playing. When the instructor awoke Marvin, he stated that it was boring being in the classroom by himself. Based on this observation, it could be that Marvin needed social interaction in the classroom in order to be motivated.

Student Outcomes

Marvin did extremely well in the course, compared to the other students. He ranked in the 50th percentile of the class (total of 25 students). Marvin received 770 (see Table 4.5) out of 840 points possible. He received a B on his final exam but received an A for his final grade.

Marvin also felt that he was able to apply what he had learned in the distance education course towards research:

Like I said, I was able to help my parents find a lot of information about construction on the WWW. They were able to compare costs of building materials. I could also use the computer for more than just playing computer games. I learned to use e-mail and effectively use the Internet. I also picked up valuable research tips for future classes. I've also been able to use this knowledge in

both personal and other school research. I even helped my sister find information.

Based on Marvin's interview response and his overall academic performance, it was evident that he was able to perform at the college level. Furthermore, he was able to combine both previous and current learning experiences and apply it to a new learning situation.

Summary

Even though Marvin continued to seek instructional support throughout the course, he had the motivation to persevere on his own. On occasion, absenteeism contributed to Marvin's lack of progress but did not impact his overall academic performance in the course. Marvin was also faced with the difficulty of trying to deal with the rigors of college course work as well as balancing his high school and college course work at the same time. Yet, it appeared as if video instruction, instructor and college support, provided the intervention that was needed for Marvin to experience the success of completing a college course while still enrolled in high school.

Student Three: Vivica

Vivica, an Hispanic female, was a senior at Silver State High School and had a 2.7 GPA. At the age of 17, Vivica was expelled from mainstream high school in 1998 because of absenteeism due to her pregnancy. Like her classmates, Vivica had previous computer experience, knowledge of the Internet and World Wide Web. Yet, she did not have access to a VCR nor a computer at home.

Vivica was a single parent with a one-year old son. Her mother was also a single parent with an annual income of \$20,000 (see Table 3). Vivica worked part-time as a custodian at the community college and had plans of attending college upon graduation from high school.

Student Profile/Learner Characteristics

Previous Learning Experience

One of the questions that the instructor asked the students during their first class meeting was what kind of previous learning experiences they had using the Internet. The instructor discovered that Vivica, like Chris and Marvin, had previous knowledge of using computers and was familiar with the World Wide Web (WWW). She indicated that she used the WWW at school to communicate with other people in the chat rooms and used Infoseek, a search engine, for finding information. Vivica was also very comfortable volunteering for activities that focused on how to use the WWW. Like Marvin, she scored an A on assignments two and three which focused on how to use the World Wide Web to conduct research (see Appendix B).

Student Independence

One of the things the researcher noticed about Vivica in the very beginning of the course was her demeanor, which caused her to stand out among the other students. She always seemed to have a serious expression on her face, as if she was in deep thought, and was seldom seen smiling or joking around in class like her classmates. She reminded the instructor of some of the adult learners that she had encountered. Like Vivica, they seemed to approach learning as if it were critical to their overall well being.

Initially, Vivica was characterized as a team leader in the classroom. She was often observed volunteering for class activities and assisting classmates on assignments. She was clearly an active participant in the classroom. However, after approximately four weeks into the semester, the researcher discovered that Vivica preferred to work independently on class activities as opposed to working in a group. During a class meeting at the college campus, for example, the researcher observed Vivica sitting next to Dell and Chris. After approximately ten minutes, she moved from the group and sat at another computer on the opposite side of the computer workstation and continued to work on her assignment. Both Dell and Chris looked a little embarrassed as if they had been preventing Vivica from doing her assignment. The instructor, concerned with Vivica's behavior, approached her to find out the problem. Vivica stated that she could get her work done faster by working alone. She stated that she could not concentrate sitting next to her friends. During another observation on the college campus (week 11), Vivica was seen telling Marvin to move away from her so that she could do her work. She told him to do his work and to stop interrupting her because he was behind in his work. Marvin laughed and walked over to his computer. These events illustrated Vivica's desire to work by herself and represented a change in her behavior. In the beginning of the course, Vivica participated as a group member and a leader. However, as Vivica progressed, she chose to work alone instead of with the group.

Self-Confidence

Given all Vivica's responsibilities, the researcher had expected her to be unorganized at times because of the fact that she had so many things to do. However,

Vivica exhibited a great deal of confidence, drive, determination, and discipline throughout the 15-week semester. She always seemed to be prepared for class. Vivica also had high expectations and goals for performing well in the college course. When asked about her expectations for the course, she replied:

I was very determined to finish the course because I wanted to learn everything I can about the course in order to help myself. I expected to learn more about the Internet and how to use it. I also wanted to learn faster ways to get the information I wanted off of the Internet.

It appeared as if Vivica's goal of obtaining a college degree contributed to her outstanding performance in the course. Vivica stated in an interview that she felt very confident about her ability to achieve in the course because she liked working on the computer. She also revealed that she had plans to enroll in college upon graduation from high school. She wanted to major in business management and maybe run her own business some day. Vivica also stated that she was going to be taking more college courses after the college course. She felt that obtaining a college degree was the only way that she was going to succeed in life and to raise her child without having to struggle. The instructor could not help but show her admiration for Vivica. During a class meeting, the instructor commended Vivica for having the drive and motivation to achieve her goals. Vivica was a 17 year old with an infant child to raise. Yet, she realized the importance of completing both her high school and college education.

High School Learning Environment

School Atmosphere

Vivica became pregnant while she was enrolled at her former high school and was expelled because of low attendance. The transfer to Silver State High School provided her with onsite child care while she attended school. In spite of this advantage, other distractions at her high school campus appeared to be the norm for students in the study. During one classroom observation (week 2), the instructor and the students were interrupted by screams outside in the school yard. Vivica ran to the door to see what was going on. She indicated that a girl was arrested by the school police for fighting.

Although data did not indicate if the high school atmosphere constrained Vivica's progress in the course, the researcher felt that it was important to address the learning conditions that Vivica and her classmates were exposed too on a daily basis. While Vivica did not discuss the school atmosphere in detail, this vignette illustrated why the high school atmosphere at Silver State North was not always conducive to the students' learning.

School violence was not the only issue that students had to contend with at Silver State High School. One morning (week 6) at approximately 7:30 a.m., the instructor stopped by the high school computer lab to visit the students. As she approached the trailer, she heard sounds of laughter coming from the room. As the instructor entered the computer lab, she suddenly stopped and looked shocked as she stared around the room. She could not believe what she had smelled in the air. Yes, the smell of marijuana permeated the air! One of the students in the computer lab noticed the instructor's

presence and began whispering to another student. The instructor looked around for Mr. Smith or the computer instructor, but neither one was in the classroom. As she turned to leave, she heard Vivica's voice.

Vivica: Ms. Flowers. Don't leave. Mr. Smith will be right back.

Instructor: Vivica, they are smoking weed.

Vivica laughed: Oh those guys are so stupid. Mr. Smith is afraid of them. He won't do anything. This happens all of the time.

The researcher pondered whether this information should be revealed because she was concerned that it may harm the students and the school administrator. Yet, it was part of the observations noted in her study as well as part of the students' atmosphere on the high school campus. Later that afternoon, the instructor met with Mr. Smith and told him what she had witnessed during her earlier visit to the computer lab. Although he had a shocked look on his face, the instructor could tell that this was not the first time such an incident had occurred. His response was, "Oh those kids are out of control. They won't listen to anyone. That's why the cops are always here. The kids who really want to learn, like Vivica, really do not stand a chance in this place."

Limited Access to Technology

In the beginning of the course, Vivica experienced the same frustrations as her classmates. Not only did she have to share a computer, but not having access to her own computer reduced the amount of time that she was able to work on her class assignments in the course. Vivica dealt with this obstacle by sharing a computer with one or two of her classmates. During an observation, the researcher watched as Vivica and Chris took turns

using the same computer to practice. Chris took notes while Vivica practiced on the computer, then they exchanged places.

The lack of access to computers in the high school computer lab was frustrating for Vivica because she, unlike her classmates, did not own a home computer. Vivica felt that she was constrained in her ability to schedule time to work on her assignments in the high school computer lab. She explained:

It seems like we never get enough time to work on our assignments. Something is always going wrong. Like the printer jamming up. Or we have to wait for the facilitator to set things up and then we find that something isn't working. This school really needs some money. We should be like the other schools.

What seemed apparent in the above observation is the adjustment Vivica made to overcome the obstacle of not having a computer of her own to complete her course work. Although Vivica appeared frustrated, she continued to make the best of her learning situation without giving up.

Outside Influences

Part-Time Employment

One of the outside influences apparent in this study was students working while enrolled in school. On several occasions, the instructor saw Vivica in the late afternoons during the week, working in the computer lab. One time the instructor approached Vivica and asked how she was doing on her assignment. Vivica stated that she was not having any problems. The instructor told Vivica that she was very pleased to see her working on her own. During their conversation, the instructor also found out that Vivica was working part-time at the community college:

Vivica: *I work here now. I've been working for about a couple of weeks.*

Instructor: *What do you do here?*

Vivica drops her head a little.

Vivica: *I'm a custodian. I really need the money for me and my baby.*

Instructor: *I am so proud of you. There is nothing to be ashamed of. Your hard work will pay off. I will also check around on campus to see if I see any other job openings that may interest you.*

Vivica smiles and says, "Ok." Initially, the instructor thought it strange that Vivica had never mentioned that she worked at the college since she had many opportunities to do so. Her demeanor in dropping her head and the intonation of her voice indicated to the researcher that Vivica may have been embarrassed because she was a custodian. At the same time, what can be derived from the field notes was that Vivica managed to put forth the effort to schedule time for her course work while she was on the job.

Single Parenting

In addition to working part-time, Vivica, had the responsibility of raising her one-year-old son. On occasion, Vivica had to miss class to take care of her ill son because the nursery would not take care of him. The facilitator also stated that there were times when Vivica had to stay at home and take care of her child, because school policy would not allow the nursery to care for sick children. Once, Vivica contacted the instructor by phone and asked if she could meet with her because she had missed class. The instructor agreed. Vivica was concerned because she realized that they were approaching the end of the semester. She wanted to make sure that she did not fall behind in class. The instructor met with Vivica at the college computer lab to discuss which video lectures needed to be

watched and which assignment had to be completed. She stated that she could either watch the video before she left Silver State or in the college library during her break.

From these recorded events, it was evident that being a single parent while enrolled in high school was challenging for Vivica. Furthermore, in an interview, she stated that life and school had become difficult when she became pregnant and after her son was born. Vivica also revealed that it took a lot of time to care for her son and go to school. In spite of having the responsibility of raising a child, working, attending high school and college at the same time, Vivica still managed to attend class on a regular basis, missing class only three times in 15 weeks. In Vivica's case, it appeared that her motivation to establish a safe, nurturing environment for her child and to obtain her college degree were elements that contributed to her progress in the course.

Distance Education Learning Experience

Classroom Culture

To determine what impact social status had on Vivica's ability to socially interact with her classmates in the study, the researcher examined field notes from the observations. As noted in the previous section on student independence, the researcher began to notice changes in Vivica's behavior in the classroom. Vivica initially participated as a student leader and a group member and worked cooperatively with her classmates. Around the ninth week of the semester, the researcher noticed that Vivica began to separate herself from the group to work by herself. The facilitator, who also noted the change in Vivica's behavior, stated that the students in the study had a tendency to lean on Vivica, especially Chris and Dell because they were usually behind in their

homework. He further commented that Vivica could get her work done a lot faster when working by herself.

According to Collins and Green (1992), students' inability to adapt to the norms and expectations of the social group and to the roles and relationships established by students in the classroom will have an affect on their progress. In terms of classroom culture, Chris and Dell had expectations that Vivica would always help them with their work. As the course progressed, Vivica began to change her role from group leader to independent learner. There were also times when it seemed as if she and Marvin were competing to see who could get their work done the fastest and obtain the highest scores on their assignments. For example, during a classroom meeting, Marvin approached the instructor and handed her his assignment. He asked her if anyone else had submitted their assignment. The instructor told him, "No." Marvin walked over to Vivica and said,

Marvin: I finished my work before you did and I am almost finished with assignment three.

Vivica: So. I am almost finished, too. What did you get on your last assignment? I got an A.

Marvin: I got an A, too.

Vivica: Yeah, sure you did. You kept asking me for help.

Marvin: No, I did not. I watched the video.

Email

Vivica used email on occasion to address questions or concerns regarding class assignments. However, there was more interaction with the instructor in the classroom

setting than there was on email. When asked about the feedback she received in the course, she replied:

I did not feel frustrated not being able to receive immediate feedback from the instructor. I asked most of my questions via email and the instructor always responded quickly. I also knew where her office was just in case I needed help. Most of the work I understood so I really didn't need help. The instructor being in the classroom or not did not affect my working habits at all because I liked and felt comfortable with the assignments.

Vivica's response implied that email proved to be an effective communication tool which promoted social interaction between her and the instructor. It also seemed as if Vivica was able to progress in the course without a great deal of face-to-face interaction with the instructor. Vivica's response also illustrated her ability to be a self-directed learner in the course.

Learner Support System

Initially, the researcher thought the lack of access to technology in the high school computer lab and at home would pose an obstacle for Vivica. She was able to overcome the barrier by scheduling time at the community college's computer lab to work on course assignments. The college computer lab seemed to create a learning environment that provided the students with access to a variety of technology resources. Vivica also benefitted from the flexible hours of operation. In a conversation with the instructor, she commented:

All I have to do is come up here on my breaks. The lab stays open a long time, too. I can get a lot of work done in a short amount of time. I like the atmosphere here, too.

The computer lab provided access to computers, email, and convenient times of operation, which appeared to be critical factors in Vivica's progress. She was able to use the lab during her breaks from work and during other hours of operation. It is important to note that several other students in the instructor's distance education class also used the computer lab. There were approximately eight students who did not have computers at home. They too, relied on the college's computer labs to provide them with access to computers and the Internet to complete class assignments.

Lack of family support posed another potential obstacle for Vivica. She revealed that it was extremely challenging trying to handle the course work in the distance education course without having a computer or a VCR at home, and raising an infant child. She explained:

I didn't have anyone at home to help me. I don't even have a computer at home. It was hard trying to find a babysitter while I went to the college. Sometimes my aunt would watch my son for me while I worked, but my mom really didn't help out that much.

Vivica's response indicated that a lack of family support in the home environment was an obstacle that contributed to the challenge of progressing in the course.

Additionally, in three instances Vivica had to miss school to take care of her child, which indicated that there was no one else available at home to babysit while Vivica attended school.

The instructor contacted Vivica at home on two occasions to check on her progress. She had decided to contact Vivica by phone because she was having difficulty understanding her explanation regarding a homework assignment via email. Her mother,

Mrs. Green, answered the phone, slurring her words as she talked to the instructor. The instructor had to repeat three times who she was and why she was trying to contact Vivica. The mother finally told the instructor that Vivica was not at home and that she was staying at her aunt's house. The instructor asked Mrs. Green to give Vivica her message and to contact her as soon as possible. She agreed. The instructor followed up with an email message to Vivica and indicated that she called her house and briefly spoke with her mother. According to Vivica, her mother never gave her the message. The instructor told Vivica that she would stop by the campus the following day to assist her.

From this exchange, the researcher questioned whether there may have been problems in Vivica's home environment. Vivica never talked about her parents with the instructor nor did she complain about any personal problems that she may have been having at home. While the home environment may have been an issue, Vivica did not indicate so, and further investigation of this issue is beyond the scope of this study.

Summary

In summary, Vivica was a self-directed, independent learner who was faced with the challenges of limited access to technology, raising a child and working a part-time job while she obtained her high school education and college education. According to the conceptual framework, a student who has to contend with these kinds of constraints has a difficult time progressing in a course (Kember, 1990). To succeed, this kind of student would have to be self-motivated. Vivica, was a self-starter, who always came to class prepared and seemed to manage her time well.

Outside influences appeared to be her greatest challenge. Vivica had a child and a part-time job, which monopolized a significant amount of her time. Even though Vivica had these responsibilities, she still managed to attend class on a regular basis and was able to overcome her obstacles to successfully complete the course. Thus, the learner support system and Vivica's drive and determination to succeed played a major role in her success in her first college course.

Student Perceptions and Attitudes

Video-Based Distance Education: Advantages

To determine Vivica's perspective on the advantages of video instruction, the researcher examined Vivica's interview. Vivica revealed that the prerecorded videos offered her flexibility to view them at a time conducive to her schedule. When Vivica missed school, for example, she was able to catch up on her assignments the following day because the video lectures were prerecorded. She had the choice of either watching the videos in the high school computer lab, during class meetings at the college, or viewing them at the college library. Vivica also found that being able to rewind the prerecorded videos was extremely beneficial. She stated that she was able to reinforce her learning by reviewing segments of the video that she did not understand.

Based on Vivica's response, it was evident that video instruction created a learning environment in which she could learn at her own pace, and still succeed in the course. Unlike the traditional classroom, Vivica was able to review the instructor's lectures word for word. In a regular classroom, she probably would have relied on a

classmate's notes to catch up on course work. Vivica's academic performance in class was also a clear indication that she benefitted from video instruction.

Distance Education: Disadvantages

Although data suggested that Vivica benefitted from video instruction, she revealed in an interview that she encountered some problems with the method of delivery. Vivica felt that the videos were boring at times. As a result, she would lose her concentration and would have to spend time rewinding and reviewing missed portions of the video lecture. Vivica revealed that another disadvantage of video instruction was not being able to ask the instructor questions about the lecture while the video lecture was being presented. Although Vivica continued to use email to communicate with the instructor, she felt that it was not the same as being able to interact face-to-face with the instructor in the classroom. Vivica stated that there were times when she would have liked an immediate response to her questions instead of having to rely on assistance from the facilitator and her classmates. On the other hand, she did not perceive this issue a cause for frustration because she usually felt comfortable answering most of the questions on the assignments by herself. Vivica stated that if she had a question regarding her homework, she would usually send the instructor an email message.

Vivica also revealed in the interview that she preferred the traditional classroom because she could not adapt her learning strategies used in the traditional classroom to the distance education environment. She explained:

I think the instructor did a good job with the videos but I would have preferred a text-based instruction course. I can speed read and flip through a book, and highlight its pages, but the VCR only plays at one speed and I

cannot carry the video to the computer lab and flip through it so, I just watched the videos and took notes and carried my notebook to the computer lab.

While the linear nature of the VCR and videos may have created a challenge for Vivica, what seemed certain was that Vivica managed to eliminate another obstacle that may have posed a potential problem for her in the course.

Instructor's Course Materials

One of the concerns Vivica had with the instructor's course materials was that she felt that the instructor needed to redo her video lectures. She thought that the instructor wasted a lot of time in the video repeating questions and online demonstrations. She indicated that she only needed to rewind the video if she did not understand a segment of the instructor's lecture. Vivica's response was also common among her classmates in the study and other students who were enrolled in the course. While Vivica made a good point, other students have preferred hearing the instructor repeat the question as opposed to rewinding the tape.

College Course Work

Vivica found the college distance education course work intellectually stimulating. She thought that the course work at Silver State was too easy. In a conversation with her classmates Vivica commented:

You guys just aren't used to thinking. College makes you think, remember. The work here is too easy, like our math class which teaches 4th grade math. When is the last time you guys had to take homework home or your books?

The response implied that the students were not being given a challenging curriculum at Silver State High School. Further, Vivica's response also corresponded

with Marvin's comment that the "course assignments really made you think." According to researchers (Means, Chelemer, & Knapp, 1991), low-achieving students usually receive less instruction on the advanced academic skills than do more advantaged students, and their curriculum is less challenging and more repetitive. Thus, it could be possible that the students in the study were not being academically challenged in the classrooms at Silver State High School.

Student Motivation

From the beginning to the end of the 15-week semester, Vivica continued to work at a constant pace in the course. Even when she missed class, she quickly caught up to speed. She also put forth a diligent effort to schedule time for her course work at the high school and on the college campus. When Vivica was asked to describe her most rewarding experience, she revealed that being able to use the computer lab whenever she wanted and meeting other college students on campus. Vivica also indicated that she was going to take more college courses at the community college.

Based on the results from this study, Vivica did not fit the profile of a low-achiever as described by researchers (Donmoyer & Kos, 1993; Wells, 1990). In fact, she was the complete opposite of the profile. Vivica was a self-directed learner, disciplined, and was determined to achieve her goals. It was evident in Vivica's academic performance, her school attendance, and her ability to successfully complete the course, that motivation was a factor that positively influenced her progress. It also appeared as if the facilitator and instructor played a supporting role; however, it was unclear as to what extent their support contributed to Vivica's progress. The instructor ensured that the

students had access to technology on the college campus, and she was instrumental making sure that the students had transportation to get to the college. She also encouraged Vivica and her classmates to do their very best. Furthermore, the instructor made visits to the high school on a regular basis to check on Vivica's and her classmates progress throughout the 15-week semester.

Student Outcomes

Vivica did an outstanding job in class. Out of 840 points possible, she scored a total of 825 points (98%), received an A for her final grade (see Table 4.5), and ranked in the upper 86th of those who completed the course. Vivica was also the only student in the study to receive an A on the final exam.

Upon the conclusion of the course, the researcher wanted to find out if the students were able to apply what they had learned. In Vivica's case, she felt that she was able to apply her library research skills. She explained,

I don't have any research papers to do in my classes at Silver State. But, I was able to go to the college and look up scholarship information on the Internet. For example, the instructor told me the college had a scholarship for single parents and that it was on the WWW. So, I went to the college home page and found the information. I am going to apply for the scholarship next year.

Vivica's use of her library skills to obtain scholarship information may have been an indication that she had begun the planning process to continue her college education.

Summary

Self-confidence and independence are learner characteristics used to describe Vivica. Motivation and college support had a positive influence on her progress in the course. The use of prerecorded videos enabled Vivica to learn at her own pace. Several

factors such as part-time employment, lack of access to technology, and single-parenting created potential obstacles for Vivica. In spite of these factors, Vivica overcame the obstacles to receive an A for her final grade and successfully completed her first college course while enrolled in high school.

Student Four: Dell

Dell, an African-American female, was a junior at Silver State High School and had a 2.0 GPA. At the age of 16, she was expelled from mainstream high school in 1998 due to a high rate of absenteeism. Dell planned to attend college upon graduation from high school. Dell also had previous computer experience, but limited knowledge of the Internet and the World Wide Web.

Dell lived in a single-parent household. Her mother had an annual income of \$27,000 (see Table 3) and was currently enrolled at a local university. Dell also had a VCR and computer with Internet access at home.

Student Profile/Learner Characteristics

Dell was very shy in the classroom. During the first class meeting (Friday, January 15, 1999), Dell was quiet as the instructor reviewed the course syllabus with the students. In the first three weeks of the course, Dell did not talk much in class during observations or when the instructor was present in the classroom, nor did she seem to interact a great deal with her classmates. Of the other students in the study, she appeared to be most comfortable working with Chris and Vivica.

Absenteeism

Dell was absent 10 times during the 15-week course (see Table 4.3). Most of Dell's absences from class occurred towards the end of February 1999 through the beginning of May 1999. Dell's classmate, Vivica indicated that Dell's absenteeism from class was due to illness. Vivica also stated that Dell was always in and out of the hospital but that she did not know why.

One of the things noted in the observations was that Dell seemed to have a difficult time catching up on her assignments when she returned to class. During a visit to the high school campus (Week 6), the instructor stopped by the computer lab to see how the students were doing. As the instructor stood in the back of the room talking to Mr. Smith, she overheard Dell asking her classmates for help with her assignments:

Dell: Vivica, what did I miss last week? I tried to watch the video at home, but I wasn't sure if it was the right lesson. I didn't understand what the instructor was saying anyway.

Vivica: Girl, you are so behind. Where have you been? Why didn't you call me?

Dell: I don't know. I've been sick off and on. I'm behind in my other classes, too.

Dell's conversation with Vivica was another indication that she was falling behind in class. Initially, the instructor thought that Dell's limited previous experience using the World Wide Web may have posed a problem for her. However, after further examining the field notes, the researcher found that this did not seem to be the case. During several class sessions, the researcher noticed that Dell appeared to look distracted as she watched the video lecture. Continued observation showed that Dell appeared to be "staring into

space”, looking as if she did not have a clue about what was going on in class.

Periodically, she would pick up her pen to take notes, then she would stop.

Dell also had a tendency to submit assignments that were either late or incomplete. All of her test scores except for assignment one, were low (see Appendix B). Dell’s low attendance rate, her illness, and her distraction in the classroom, may explain why she was behind in class and why her scores on her assignments were low. Dell also did not understand how to do the course work. Her request for help from her classmates suggested that she was struggling to progress in class.

Self-Confidence

As the researcher observed Dell throughout the semester, she noticed that as weeks passed, Dell became more reluctant to volunteer for class activities. During a class visit to the high school campus, the instructor spent a little time with Dell before the students began working on their assignments (week 8). She asked Dell if there was anything that she could do to help her in class because she was still behind in class. Dell stated that she really wanted to get a good grade but that she would often get confused at times. She further commented, “I get frustrated when there is no one to help me.” Dell’s response suggested that she was overwhelmed in the course. She became more and more frustrated as she fell behind in class. It also appeared that her frustration in class was due to the lack of support that she received on her course assignments from the facilitator and her classmates.

The question arose about whether Dell really wanted to be in the college course. When asked to discuss her expectations at the beginning of the course, Dell revealed that

she was unsure as to how well she was going to perform in the class. She stated that she did not know what to expect or how hard the work was going to be in the course. Dell also revealed that she had planned to go to college upon graduation from high school, and that she wanted to make sure that she was prepared to go.

Although Dell had future plans to attend college, it appeared as if her main reason for doing so was to leave home. She commented:

My mother wants me to go to the University of Colorado when I graduate. She's in college, too. I really would like to take a break from school, but my mother wants me out of the house.

The response implied that Dell's main reason for attending college was not by choice but to appease her mother, since Dell stated that her mother wanted her out of the house. If this was the case, it may explain Dell's motive for enrolling in the course as a type of academic preparation for college. Enrolling in the *Research on the Internet* course was one way for her to begin to prepare for college.

High School Learning Environment

Limited Access to Technology

Although Dell had a computer at home, lack of access to computers with Internet access in the high school computer lab appeared to be a problem for her. She dealt with this situation the same way as her classmates by taking turns using the computer. During the third week of the semester, the instructor stopped by the computer lab, specifically to see Dell because she was having difficulty learning how to search the online catalog. As the instructor entered the room, she overheard Dell telling her classmates that she was glad that she had a computer at home because she would not have been able to get any of

her work done in the computer lab. Dell indicated that she needed more time to practice on the computer by herself. However, in an interview, Dell admitted that she did not mind working on the assignments with her friends because she felt that it really helped her to understand.

It appeared as if limited access to technology may have been a factor that constrained Dell's progress in the course. Initially, the researcher questioned why Dell was unable to catch up in class since she had a VCR and a computer at home. Dell informed the instructor that her mother spent a lot of time on the computer because she was taking classes in college, too.

Distance Education Learning Experience

Classroom Culture

The researcher examined field notes from observations to determine how Dell approached learning in the classroom. In most cases, Dell worked with one or two of her classmates in the study. She appeared to be more of a group learner than an independent learner because she was seldom seen working alone. Dell rarely worked on a class activity without first obtaining direction from her classmates. Dell may have lacked self-direction and needed group support to reinforce her learning. During one observation (week two), the facilitator asked for a volunteer to demonstrate how to access email. Marvin volunteered to go first, while Chris and Vivica followed. When it was Dell's turn, she moved reluctantly towards the computer. She appeared unsure of her ability to perform the class activity even though she had observed her classmates before attempting to try on her own.

Dell behaved differently in the high school and college classrooms. During class sessions in the high school computer lab, Dell had a tendency to position herself on the perimeter of the group. Instead of sitting directly next to Chris or Vivica where she could have had a better view of the computer screen, she positioned herself off to the side of her classmates or behind them. Dell had a tendency to do the same thing when the video lectures were being shown in the high school computer lab. During class sessions in the electronic classroom on the college campus, Dell had a tendency to sit next to one of her classmates instead of behind them while she used her own computer.

Learner Support System

Dell enjoyed being able to have her own computer in class. In one class session (week five) on the college campus, Dell was observed working on a computer while Vivica and Chris sat nearby working on another computer. They were exchanging information and assisting each other. This usually was the only opportunity that Dell got to work on a computer independently without having to share with her classmates.

It appeared as if Dell liked working in a classroom environment where she had access to her own computer while still being able to work along with her classmates. During one observation (week 6), the instructor stopped by the college computer lab to check on the students' progress. Dell told the instructor that the computer lab was nice. She stated that it was nice being able to sit next to Vivica and Chris and work on assignments while using her own computer. When asked in an interview about the kind of support the college provided, Dell indicated that watching the video in the college's computerized classroom and using the computer lab to work on her assignments really

helped. It also gave her more time to talk to the instructor who explained how to do the assignments.

It was evident that the college support had a positive influence on Dell's progress in the course. Having access to technology created an opportunity for Dell to spend more time on her assignments. Although Dell enjoyed having the much needed access to computers, she still preferred to meet with the class on the high school campus rather than the college campus. When asked in an interview if she looked forward to attending class, she responded:

Yes, I look forward to class, even though I was absent a lot. I have been sick and I even had to go to the hospital. Sometimes, I didn't like going to the college. I would rather work at Silver State in the computer lab with my friends.

Dell's response was indication that she felt more comfortable on the high school campus than she did on the college campus. It suggests that Dell's preference to be in the high school setting may have been a result of being able to be closer to her friends as well as being in familiar surroundings.

Dell was asked if she had family support during the course. She revealed that she received minimal support from her mother. Dell's mother was also taking a college course. Thus, there were times when Dell's mother was not at home to her. Dell stated that there were a few times when her mother attempted to help her with her homework but had little success. Based on Dell's response, the researcher can only speculate that Dell received minimal personal support at home, even though she had access to a TV/VCR and a computer at home to support her learning.

Summary

In summary, Dell, was characterized as a group learner. Dell also appeared to lack confidence as she progressed in the course. Lack of access to technology in the high school and a low attendance rate in school created a problem for Dell. Although she had access to technology at home, it seemed that it was not always accessible to her. Kember (1990) states that certain background factors can influence a student's progress if certain interventions are not put in place to help them progress. In Dell's case, she had the support of her classmates to keep her progressing in the course.

Student Perceptions and Attitudes

Video-Based Distance Education: Advantages

To determine the advantages of video instruction for Dell, the researcher examined her interview. Dell revealed that it was nice being able to watch the videos when she returned to class from being absent. She stated that she was able to pick up where she left off on class assignments. Dell also felt that she could learn at her own pace. She revealed that it would have been very difficult to catch up on her homework in her other classes in high school unless the teacher scheduled additional time to spend with her.

Another advantage of learning by video, according to Dell, was that she could "keep watching the video over and over and review certain sections of the lecture that she didn't understand." She also found that it was easier learning in class when she could watch the video while she was working on the computer but that trying to do both at the same time, created a problem for her. She explained,

The only bad thing about watching the video while I was working on the computer, was that I had a tendency to pay more attention to what I was doing on the computer instead of listening to the instructor's lecture.

Based on Dell's interview, it appeared that learning by video instruction was an effective way for her to learn. Dell had missed several classes and was behind in her homework; yet, she was able to catch up by watching the recorded lectures. Dell completed all of her assignments including her final examination for the class (see Appendix B). Based on this information, it is possible that video instruction could have contributed to Dell's ability to successfully complete the course.

Distance Education Disadvantages

Although Dell felt that she was able to pace her learning in the course, she was still faced with the challenge of making decisions on her own without the instructor's presence in the classroom. She stated in an interview that she needed immediate feedback, which she felt was not provided in the course. Further, Dell did not like having to wait for a response via email. Even though Dell acknowledged receiving the instructor's email messages, she usually waited until she saw the instructor in person before proceeding with her assignment. She explained,

I liked being able to learn on TV, but I couldn't ask the instructor questions. Sometimes, the facilitator or my classmates didn't know the answer either, so I just waited for Ms. Flowers. I also get confused when I tried to do my homework at home. My mother didn't understand either.

Dell's response indicated that she preferred more face-to-face interaction with the instructor. It appeared as if she did not like using email to communicate with the instructor, which was an indication that she may have disliked interacting online. Dell

also appeared to have a problem watching the videos by herself without the reinforcement from the others. She revealed that it was difficult watching the video for a long period of time. She stated that sitting for an entire half hour just to watch the video was too long. Dell's response suggested that perhaps the length of the video was too long to hold her attention. If so, this could explain why she appeared lost during the lectures.

There were times when Dell would become distracted and would have a tendency to fall asleep during the video lecture. During one class meeting (week 10), the instructor observed Dell taking notes. Yet, after approximately twenty minutes had passed, she began to squirm in her seat. Next, she stopped taking notes and placed her notebook on the side of the desk. After a few minutes, she got up to walk towards the back of the classroom. She glanced out into the computer lab and returned back to her seat. Again, it appeared as if the length of the video lecture was too long to hold Dell's attention. Thus, the videos may need to be presented in a different format for students like Dell, so that they do not lose their focus.

Instructor's Course Materials

The previously noted changes to course material that were not reflected in the videos confused Dell. Although she had been informed earlier in the study that changes to the printed course material had been made, Dell did not remember. In an interview, Dell revealed that she also found the instructions confusing when the instructor sent them via email, and when revisions were made to her web page in the middle of the semester.

College Course Work

Dell felt that the course work was challenging. She really had to pay attention to the videos to understand how to do the assignments. Although Dell made a diligent attempt to watch the videos at home, she ended up having to wait until she returned to school to get help on her assignments from her classmates and the facilitator.

It was evident that the college course was challenging for Dell. What is not certain is whether the course was difficult because it was too advanced for her or because she had fallen behind in her course work, or a combination of both factors. One of the misconceptions of the distance education course is that students equate video instruction with self-paced instruction. The instructor discovered that students often think that they have the entire semester to complete the course without any time lines. However, in this distance education course, the time line is defined since students have the responsibility of submitting assignments on a weekly basis.

From the researcher's experience as a distance education instructor, students also have a tendency to delay completing their course work long enough to make it difficult for them to catch up, even though the lecture is on video. When that happens, the students usually will request an incomplete for the course, receive an F as their final grade, or they will withdraw before the college's deadline. Although Dell fell behind, she continued to persevere to successfully complete her first college course while she was in high school.

Student Motivation

Dell had a low attendance rate in class, had a tendency to submit class assignments late, and obtained low scores on her assignments. However, when Dell

attended class, she actively participated as a group member. According to the research model, Kember (1990) states that motivation is the critical determinant that indicates success or failure in the learning process. Kember (1990) also argues that the distance education program has little influence over a student's intrinsic and extrinsic motivation. Given the case data on Dell, it may have been a combination of instructor, facilitator, and group support. Dell's belief in herself also could have been a contributing factor in her ability to successfully complete the course.

For example, in an interview, Dell revealed that being in the college distance education was a rewarding experience for her. She stated that her most rewarding experience was learning how to use the Internet and finding information about everything. She thought the course was "kind of fun, but a little hard." Yet, she was glad that she got the chance to take the course because she realized that she had to be more disciplined and motivated to handle a lot of homework in college.

Student Outcomes

Dell received a C or below on six of the eight assignments (see Appendix B). She also scored a low C on her final exam. Out of 840 possible points, Dell scored 625 points (74%) which resulted in a C for her final grade in the college distance education course (see Table 4.5). Further, she represented one of the seven students in the entire class (28) who received a C and performed better than eight percent of the class.

Although test scores indicated that Dell was a marginal student, she may actually have felt that she did an outstanding job since she did not give up. Dell was able to apply what she had learned. In an interview, Dell revealed that she used her skills to show her

mother how to search the online catalog, which was one of the library skills that she learned in the course. In addition, she was able to use the Internet to find information about a college that she planned to attend. She stated that she and her mother spent a great deal of time on the Internet, searching for information. Perhaps Dell's experience in the college course created an opportunity for her and her mother to experience learning together because it appeared as if they both could benefit from the skills that Dell attained in the course.

Summary

Lack of school attendance, lack of access to technology, illness, and face-to-face interaction with the instructor were factors that constrained Dell's progress in the course. Attending class on the college campus was not necessarily an advantage for Dell. She preferred attending class on the high school campus where she could be closer to her friends. Dell also had a difficult time handling the college course work. In spite of her difficulty, college support, instructor and facilitator, and group support were factors that contributed to Dell's ability to successfully complete the course.

Cross-Case Comparative Analysis

The previous section presented a global perspective of the students' learning experience in the study. This was followed by the researcher's analysis of the four individual case studies, which identified significant factors that contributed to each student's progress in the college course. The following section discusses how the researcher's framework was expanded to address factors that contributed to the students'

progress and continues with a cross-case comparative analysis of the four student case studies.

Kember's (1990) model was used as a foundation to construct the theoretical framework to describe the factors that influenced the students progress in the college distance education course. Because Kember's framework only focused on the learning progress of adult students and not high school students in a college setting, the work of other researchers was included to build the framework for this study (Collins & Green, 1990; Hodgson, 1986; Nieto, 1996). As data analysis occurred, the researcher identified other factors, which were not included in Kember's model nor the overall conceptual framework for the study. The conceptual framework, including the data derived, is outlined in Table 4.1 The "X" distinguishes which factors are attributed to which source.

Kember's (1990) framework indicates background characteristics such as individual, family, and previous educational experiences are important variables to consider when trying to understand how and why students succeed in distance education. However, this study suggested that learner characteristics such as self-confidence also had an influence on students' progress in the course. Although absenteeism was listed as a learner characteristic in the Table 4.1, it was eventually categorized as a learner outcome which constrained the students' progress in this study.

Nieto's (1996) theoretical construct suggests that student progress is influenced by the school environment, and includes factors such as access to technology and educational policies and procedures. In this particular study, course scheduling was also a factor within the school structure that had a negative influence on the students' progress.

Hodgson (1986) indicates that the interrelationship between the support systems of a distance education course and the learning materials can be very influential upon the students approaches to learning. In this study, classroom management also had an impact on students' learning in the college distance education course.

Kember's concept of the home environment was also expanded. Kember (1990) states that family, home, and work can have an influence over the academic success of

Table 4.1
Researcher's Expansion of Conceptual Framework

Conceptual Framework: Factors Affecting Students' Progress	Kember (1990)	Nieto (1996)	Hodgson (1986)	Tuyay, Jennings, & Dixon (1995); Collins & Green (1992)	Researcher's Expansion of Conceptual Framework
Background Factors - Learner Characteristics	X				
Absenteeism					X
Self-Confidence					X
Previous Learning Experience	X				
Independent Learner					X
Learning Environment		X			
School Atmosphere		X			
Course Schedule					X
Limited Access to Technology		X			
Distance Education Course		X			
Course Materials			X		
Classroom Management					X
Academic Support	X				

Conceptual Framework: Factors Affecting Students' Progress	Kember (1990)	Nieto (1996)	Hodgson (1986)	Tuyay, Jennings, & Dixon (1995); Collins & Green (1992)	Researcher's Expansion of Conceptual Framework
Instructor Support (Expectations)	X			X	
Family Support	X				
Facilitator	X				
Outside Influences (Home Environment)	X				
Part-time Employment	X				
Family	X				
Single-Parenting (Child as Parent)					X
Social Commitments	X				
Classroom Culture				X	
Student Motivation	X				
Student Outcomes					
Test Scores					X
Attendance					X
Participation					X
Learning experience					X

distance education students. While Kember focused on adult learners and their role in the home environment, this study expanded upon his concept to reflect a reversal of the family's role in the home environment where one high school student played the role of the parent and the family provider. Learning outcomes such as test scores, learning experience, and student attendance and participation are also included to indicate learner progress in the college distance education course.

Categories and subcategories that reflect the theoretical framework and include the additional factors which had a significant impact on student learning in the college distance education course are identified in Appendix D. The factors identified through this study are in bold-face type.

The categories and themes were created from *Atlasti*, a qualitative software package, but were initially constructed from the elements of the framework, and then expanded as needed. The positive and negative factors are highlighted. The variables were discussed in detail in the four individual case analyses.

Donmoyer and Kos (1993) and Wells (1990) define at-risk students as those with limited academic achievement and are characterized as having high absenteeism, low grades, low self-confidence, and low self-esteem. The following learner characteristics were used to describe the students: self-confidence, group learner, and independent learner. Although absenteeism was initially categorized as a learner characteristic, data indicated that it was actually a learner outcome. Table 4.2 provides a detailed analysis of the learner characteristics which contributed to the students' progress in the distance

education course. The letters H, M, and L represent high, moderate, and low levels in the absenteeism and self-confidence categories.

Examining across the four cases, Chris, Marvin, and Vivica exhibited high self-confidence while Dell exhibited low self-confidence. Absenteeism was a major factor for Chris, moderate for Dell, and low for Marvin and Vivica. While absenteeism was a common theme across all four student cases, each student had a different reason for being absent in the distance education course. High absenteeism was determined by the number of absences students' had in the 15-week course. Students who missed more than six out of the 30-class meetings, such as Dell and Chris, were characterized as having either moderate or high absenteeism.

Table 4.2
High School Student Profile/Learner Characteristics

Students	Absenteeism			Self Confidence			Group Learner	Independent Learner	Student Leader
	H	M	L	H	M	L			
Chris	X			X			X		
Marvin			X	X				X	X
Vivica			X	X				X	X
Dell		X				X	X		

Chris missed more classes than any of the students in the study. Marvin and Vivica, who missed six classes or less, were characterized as having low absenteeism in the distance education class.

Table 4.3 is a chart representing the number of classes each student missed in the distance education course. It also identifies the number of absences each student had during classes held on the high school campus as compared to class meetings on the college campus. Out of the 30 class meetings, 15 (50%) class meetings were held on the high school campus and 15 (50%) on the college campus.

Table 4.3
Total Absences in Distance Education Course

Student Names	High School Campus	College Campus	Total Absences
Chris	8 (27%)	4 (13%)	12 (40%)
Marvin	5 (17%)	1 (3%)	6 (20%)
Vivica	2 (7%)	1(3%)	3 (10%)
Dell	6(20%)	4 (13%)	10(33%)

Three students, Chris, Marvin, and Vivica, missed more distance education classes on the high school campus than the college campus. Dell, on the other hand, missed more classes on the college campus (20%) than the high school campus (13%).

Data suggested that physical fatigue contributed to Chris' low attendance in class. She was working at a part-time job, and taking a class at a vocational school, along with her high school courses and the college course. Chris' schedule also created a gap in time during which she had to wait for the distance education class to begin. Impatient, she would leave the high school campus and would not return to attend the college class. Based on the field notes from observations and interview and student records, the

researcher deduced that Chris' work schedule and class schedule contributed to her overall difficulties with her course work and low scoring on her tests.

Marvin did not like going to school at Silver State and had a tendency to be absent during class meetings on the high school campus. He made the comment that he could not wait to be transferred to another school. Although there were times when Marvin's absence was due to illness, it was difficult to determine whether his absence was really due to "sickness" or a lack of desire to attend school. Marvin also stated that there were a lot of gang members attending Silver State and that they were always starting fights with other students.

Vivica had to miss school when her child was sick. Unlike her classmates, Vivica had the responsibility of raising an infant son and working part-time. Although Silver State High School had a child care facility, school policy would not allow the employees to take care of sick children. Thus, when Vivica's child was sick, she had to stay at home to take care of him. What is important to note is that Vivica made an effort to meet with the facilitator or the instructor to obtain the course assignments when she returned to school. Her late homework was always submitted a couple of days after her return to school. Further, it did not appear as if Vivica's absences interfered with her ability to perform well on her assignments.

The interaction between Vivica and the facilitator and instructor represented the first development of an intervention being implemented in the classroom. Both the instructor and facilitator helped to provide Vivica with the face-to-face assistance needed for her to catch up in class. Usually, students in the instructor's distance education class

very seldom met with her in person. On occasion, they would contact the instructor via email to ask her questions regarding their assignment or to inform her that their assignment would be late and would be submitted at a later time.

Dell missed several classes due to illness and because she did not like attending class on the college campus. Dell preferred attending the course on the high school campus around her friends, in spite of the lack of the technology resources that were available to her. She liked the familiarity of the high school setting. This observation represented a major shift in Dell's progress. It appeared that the change in the classroom setting created a distance that Dell could not adapt to. The distance caused by moving the students from familiar surroundings to a new learning environment created discomfort for Dell. Even though an intervention (instructor/facilitator support) was established in both the high school classroom and the college classroom for Dell, she still had a difficult time progressing in the course.

Overall, in comparing the individual cases, the students with the higher attendance rate tended to perform well in class and the students with the lower attendance rate tended not to perform as well. Chris and Dell, who had the highest number of absences in class, constantly submitted late assignments and received the lowest test scores (see Appendix B). Low attendance was the main reason for Chris and Dell's expulsion from their former high school. Similar behavior contributed to their performance in the course. Vivica and Marvin, on the other hand, had the lowest number of absences of the four students in the study, only submitted a few late assignments, and received the highest test scores and the highest grades in the whole class.

Students' self-confidence (see Table 4.2) was demonstrated by their leadership skills, student independence, and the ability to take initiative in the classroom. Marvin and Vivica exhibited high self-confidence and high self-expectations in their ability to achieve in the course. In the beginning of the course, Chris appeared to be self-confident. She demonstrated that she had previous knowledge and skills by showing her classmates how to connect to the Internet and surf the World Wide Web. She was also familiar with some of the search engines. Dille and Mezack (1992) found that students who had previous experience with using distance delivery methods such as the Internet and the World Wide Web had a greater likelihood of succeeding in their course. However, Chris' expectations for succeeding diminished as she progressed in the course, but she still completed it.

Dell demonstrated a lack of self-confidence and low self-expectations throughout the course. She was observed in several classes being more of an observer than an active participant. She never volunteered to lead class activities. On several occasions, the researcher discovered that Dell had a tendency to position herself outside or along the perimeter of the group instead of in the group's circle. This observation was noted during the first day of class and continued throughout the semester.

Two types of learners emerged in the distance education classroom: group learner and independent learner. Chris and Dell were characterized as group learners in the classroom. They appeared to participate in class more when they were working in a group or in pairs, as opposed to working independently. Perhaps their low attendance in class may have contributed to their need to work in a group. Both Vivica and Marvin were

characterized as being independent learners. As they progressed in the course, they began to separate themselves from the group to work independently.

Of the four students, Marvin was identified as being a student leader. He was observed on many occasions volunteering for class activities and providing peer support to his classmates. It appeared that Marvin's self-confidence played a role in his ability to be a leader in the classroom. Self-directed learning actually emerged as a characteristic that described Marvin and Vivica, and it was also a factor that contributed to their progress and performance in class. There also appeared to be a relationship between self-directed learning and absenteeism. For example, Marvin and Vivica, who were characterized as being self-directed learners, had the highest attendance rate and the highest test scores in the class. Dell and Chris, on the other hand, had the lowest attendance rate. Students who are characterized as self-directed learners may perform better in class than those students who were not self-directed learners. This is also supported by researchers (Campbell, 1992; Cookson, 1989) who state that most students who succeed in distance education courses are self-directed and self-motivated learners.

What is important to note, is that none of the students actually fit the profile of the low-achiever (Donmoyer & Kos, 1993; Wells, 1990) even though there were factors that contributed to their lack of progress. According to the conceptual framework, students who are challenged with as many obstacles as the students in this study experienced, usually do not succeed in a distance education course and tend to drop out. Yet, all of these students successfully completed their first college course while enrolled in high school.

Nieto (1996) maintains that student progress is influenced by structural factors, such as the school organization, educational policies, and practices. She further concludes that these structures may impact student learning in negative ways. In this study, it appeared that the high school learning environment was a factor that contributed to the students' lack of progress (see Table 4.1). Course scheduling and the school's atmosphere contributed to the students' low attendance rate in the course; however, limited access to technology also created an obstacle in the students' progress.

Students' use of computer resources was severely limited in their high school computer lab. All four students revealed that the computer lab was inadequate and did not meet their educational needs. Even though the students were able to view the video lectures as a group, they still had to share a computer to complete assignments. The limited number of computers with Internet access severely reduced the time that each student could practice independently on the computer. Yet, two students, Marvin and Vivica, managed to perform well in the class in spite of the limited number of computers that were available for them to use.

The type of learning environment to which the students were exposed in the high school computer lab created advantages and disadvantages for them. First, the students were able to build their own community in the classroom. Together, they learned how to adapt to a learning situation that might have caused many students to become frustrated and give up. When the instructor reflected upon her experience of teaching in distance education, she did not recall a student not having access to technology in the course. To

the best of her knowledge, all of the students either had access to a computer at home or in the college computer lab.

According to Kember (1990) the home environment may have an influence over the academic success of distance education students. Students may have commitments to home, family and work, which could directly impact their goal commitment to the distance education course. In this study, outside influences such as part-time employment, parenting, and social commitments were contributing factors in Chris, Vivica, and Marvin's lack of progress in the course.

Table 4.4 illustrates the outside influences that impeded students' progress in the distance education course. The "X" identifies which external factors were the greatest obstacles to the students' progress.

Table 4.4
Outside Influences

Students	Part-Time Employment	Single-Parenting	Social Commitments
Chris	X		
Marvin			X
Vivica	X	X	
Dell			

Chris was employed part-time at a fast food restaurant. Her work schedule varied from week to week, which made it difficult for her to schedule time for homework. Chris stated in an interview that her job caused her to become too tired to do her work. She also

was having a difficult time balancing her employment with school work. Perhaps Chris' boyfriend contributed to her lack of progress in the course as well. However, outside influences contributed to Chris' performance in class. Test scores also support this deduction (see Appendix B).

Single-parenting and part-time employment created an obstacle for Vivica in the distance education course. When Vivica's son became ill, she would either have to leave class and pick him up from the nursery or stay at home to take care of him. As a result, she would miss her distance education class as well as her other classes in high school. In addition to attending school and raising a child, Vivica worked part-time at the community college. Like Chris, there were times when Vivica was too tired to do her work. However, Vivica did not allow single-parenting or her job to interfere with her performance in the distance education course.

It was evident in the study that employment and parenting reflected a reversal of the family's role in the home environment and the absence of family support. Although they were only high school students, Chris and Vivica had other responsibilities, which included part-time employment and raising a child. Thus, they were faced with the challenge of managing high school course work, college course work, and outside responsibilities. These additional responsibilities contributed to Chris' low performance in the course. Vivica, on the other hand, persevered and managed to balance school work, employment, and raising her infant child, while successfully completing the college course.

It was remarkable to observe how two individuals, Chris and Vivica, similarly constrained by outside influences, could perform so differently in class. Vivica scored high on all of her tests while Chris scored low (see Appendix B). Vivica had a high attendance rate in class, while Chris had a low attendance rate (see Table 4.3). It appears that Vivica had more motivation and determination than Chris to achieve her goal.

Although data do not sufficiently indicate the extent that social commitment had on Marvin's academic achievement in the college course, Marvin's decision to be with his friends, as opposed to utilizing the time to work on his class assignments, contributed to his lack of progress. Marvin revealed in the interview that he would rather spend time with his friends instead of staying home to work on assignments. He commented:

To be honest, it's hard watching the video on the weekend. I am having too much fun. I wanted to skate board with my friends. I did have trouble finding time to sit down and research the net. I often seemed to put my assignment on the back burner, telling myself I would get to them later.

Collins and Green (1992) state that social structure is a factor that influences what opportunities students have to learn, how the opportunities will be accomplished, and what results come from participating alone and in groups in everyday events. Viewed in this way, participating in events does not equate with learning but only forms a potential conditioning for learning. In this study, one of the greatest challenges students faced was learning how to learn without the presence of the instructor in the classroom to deliver the instruction. The students adapted to their learning situation by working together. Thus, group learning and peer support contributed significantly to the students' ability to achieve in the course (see Table 4.1). Peer support apparently tended to eliminate

students' anxieties. In the beginning of the course, Vivica's role shifted from a dominant student leader in the group to a moderate student leader in the classroom when she removed herself from the group to work independently. She also limited the amount of peer support that she provided to her classmates because she felt that they were depending on her too much to help them with their assignments. Marvin was identified as a leader of the group and was observed throughout the study providing instructional support to his classmates. Dell and Chris on the other hand, seldom volunteered to be the class leaders. They would usually wait to receive instruction or assistance from Vivica or Marvin before proceeding with their assignments.

In the beginning of the course, the students worked as a group sharing their previous knowledge and computer skills to help one another familiarize themselves with components of the Internet. They were also able to provide each other with individualized instruction which reinforced their learning. In doing so, they were able to draw from the knowledge, skills, and learning strategies that individual students brought to the class. The classroom not only promoted group learning and peer support among the students in the study, but it created a condition for learning in which they could watch the prerecorded videos and use the computers simultaneously. During instruction, students were able to reinforce their learning by stopping the video lecture at certain intervals to enter the online demonstrations on the computer. It was at that point that students were able to collaborate with their classmates to reinforce comprehension and to ensure that they were accessing and using the library research tools correctly.

This is very different from the way students work in a traditional distance education environment. It is difficult to determine those who are group learners online, because there is no way of monitoring student interactions in the course. It was also difficult to identify which students were collaborating with one another online or meeting face-to-face with their classmate at other locations because there was no way to monitor the email activity that took place between the students. Active participants are those students who frequently submit questions via email and respond to questions via the listserv. Group learning was only initiated in the instructor's distance education class during the times when she presented a collaborative project requiring students to work with a partner. Even then, some students would insist on working alone because they were not sure if the other person would do their share of the work.

In this study, email did not appear to have a significant impact on the communication or the social interaction between the instructor and students in the study. Students used the online class listserv to introduce themselves to the entire distance education class. They were reluctant to communicate with the other students in the class because they had never met any of them in person. None of the students attended the orientation. As a result, they were limited to introducing themselves to their classmates online via the listserv, without formally meeting anyone in person. All students used email to communicate with each other. Vivica and Chris thought that some of the students were spending too much time asking stupid questions and chose not to interact to respond to their questions.

Although these four students were welcomed by the others enrolled in the class, they refrained from communicating with them during the 15-week semester. Marvin was the only student who occasionally emailed other students. Yet, the students were observed on several occasions sending email messages to each other and chatting online in some of the chat rooms that were accessible on the World Wide Web. On occasion, students would use email to ask the instructor questions and also to interact with other classmates in the group. Of the four students, Vivica and Marvin used email more frequently to communicate with the instructor. Keiser et. al. (1984) found that keeping an active on-line discussion is the most difficult part of the teaching process. This was true in the instructor's case. The students' limited participation on email concerned the instructor, but she could not force them to ask questions nor communicate with other students via email.

The instructor told Chris and others in the study group to feel free to ask questions regarding the homework assignments on email, but they declined. She had hoped that the strategy would promote online interaction among the students, but it did not. In previous distance education classes, some of the students would use email to ask the instructor questions and seek answers to their homework assignments. The instructor encouraged them to do so, because if they had been in the traditional classroom, they would more than likely turn to a classmate to ask for help while the instructor was in the classroom.

Overall, the analysis documented the fact that the students never actually allowed themselves to become active participants in the distance education, online community.

Their community resided in the classroom and included the physical presence of the facilitator and instructor. Collins and Green (1992) state that the student's inability to adapt to norms and expectations and the roles and relationships of the social group in the classroom will have an impact on student progress.

Frequency of absence contributed to the shifting of the norms in the classroom. Results of the study revealed that students were excluded from the group when they failed to participate in class or were frequently absent. During one classroom observation, Vivica told Marvin to stop bothering her just because he was "behind" in his homework. On one occasion, Vivica told Chris to ask the facilitator for help instead of assisting her. Chris had missed two classes and had fallen behind in her course work.

Data indicated that the culture of the classroom was constructed through student interactions (Collins & Green, 1990). In this study, the roles and relationships among the students were determined by the level of participation in class. The students were expected to be active participants in the group. However, in Chris' case, she was isolated from her classmates when she failed to attend and participate in class. Cohen (1979) asserts that the low status student is affected not only by his or her own low general expectations for competence, but by low competence expectations from classmates in the group.

The Role of the Instructor and Facilitator in the Distance Education Classroom

As the instructor, I knew from my prior experience teaching other high school students in my distance education course, that it was going to be challenging for the high school students to adapt to my lack of presence in the classroom. The students had spent

their entire education enrolled in traditional classrooms surrounded by their classmates and, of course, the physical presence of the teacher guiding and monitoring their educational progress. Distance education is completely different. For some students, it is difficult making the transition from the traditional classroom to the distance education classroom because the teacher's physical presence, verbal and body contact are absent. This was the case for the students in this study.

I also felt that it was important to re-enforce the students' independence and self motivation as much as possible. I did not want them to rely on my physical presence to help them progress in the course. As the researcher, I needed to find out how the students were able to make the transition to a distance education classroom while receiving limited face-to-face contact from me. Like so many other students enrolled in distance education courses, results of the study found that lack of face-to-face interaction with the instructor was a factor that constrained the students' progress in the course. Students revealed in their interviews and in interactions with me that they really needed to have the instructor in the classroom to answer their questions. Sometimes, they would wait until I stopped by to visit them before submitting their assignments via email or giving them to me in person. The students wanted to be sure that their homework was correct before giving it to me. Chris and Dell, for example, usually would hand me a printed copy of their assignment instead of sending it via email.

I realized that my increased face-to-face interaction with the students in the classroom created a sense of dependence instead of independence among them. In some ways, I felt that I was defeating the purpose of the course. The students' need for my

approval to check their work, as well as my being physically in the classroom to answer their questions, was a clear indication that my presence, which served as intervention, may have contributed to their inability to make independent decisions. Yet, I felt obligated as the instructor to help the students who appeared to struggle with making the transition from the traditional high school classroom to the video-based instructional classroom.

One of the many challenges students faced in the course was learning how to interact with the “video instructor.” To the students, I appeared to be more of a TV personality than a “real” teacher. During one class visit, I can remember the students looking at each other and laughing as I entered the room. They had been watching a video lecture. Marvin commented, “Hey, how did you do that?” as if to say that somehow I had magically reappeared from the video. On other occasions, the students would make comments such as, “Hey your outfit or your hair is different.” These comments usually would be followed by laughter. Overall, it took a couple of weeks after the course started for the students to adjust to socially interacting with me in person.

McCleary and Egan (1992), Moore (1989), and Willis (1992) state that onsite support is critical to the effectiveness of a distance education program. Kember (1990) states that effective manipulation of these variables will integrate students into the academic environment. He further asserts that human contact, through instructor/facilitator support (telecommunications or face-to-face), is the most important method of building student-institute affiliations. In this study, the facilitator played a dual role in the course. He served as the monitor and sometimes as the instructor. I can

remember Mr. Smith commenting that he had to review the videos before class to make sure that he knew what I was talking about. He stated that the students always had a lot of questions to ask. "Sometimes I feel a little embarrassed when I don't know the answer. When I don't know, I tell them to email you." The facilitator was actively engaged in the students' learning in the distance education course. He would provide instruction and assistance to the students during class meetings as well as provide technical support for students who had difficulty operating their computers at home.

The amount of support that both the instructor and facilitator provided to the students in this study is very different from that found in a "true" distance education setting. Usually, the facilitator's role consists of proctoring exams and making sure that students have access to course materials and the technology resources needed to complete the course. Physical contact with students is limited. However, in this case, the facilitator extended his support role to ensure student success.

Although the facilitator did a good job in accommodating the students, lack of classroom management skills appeared to be a negative factor in the distance education classroom. The facilitator was often disorganized. The students usually would have to wait for at least 15 minutes until Mr. Smith set up the classroom. Sometimes, I would visit the high school campus just to make sure that the classroom was set up for instruction.

As the instructor, I also provided student support. In their interviews, the students expressed that my support had a positive influence on their progress. On occasion, I would contact the students at home to check on their progress, communicate with them

via email, and I would stop by to visit them on the high school campus and the college campus. I felt that my role was very similar to the traditional classroom instructor, except that my lectures were presented via prerecorded videos. I put forth a diligent effort to meet the educational needs of the students. In a normal distance education class, I would schedule two or three informal class meetings. Face-to-face interaction was extremely limited, although a student occasionally would request an appointment to meet with me for additional assistance.

Field notes from interviews revealed that the students received minimal family support. However, there was not enough data to determine the extent of the family's support. Marvin stated that his parents were busy running the family business. Dell's mother was taking college courses at night and worked during the day. Chris and Vivica did not indicate what their parents were doing but stated that they did not know anything about the Internet.

Video Instruction: Advantages and Disadvantages

Interview data also identified several advantages to learning in a classroom that used video instruction to deliver a course. Table 4.5 is a chart representing the advantages and disadvantages of video instruction, which had the greatest impact on the students' progress in the college distance education course. One of the major advantages to learning in a video instruction class was that it allowed the students to pace their learning. They were also able to view the video lectures at a time that was conducive to their schedule, especially during the times when they were absent from class. Crooks (1990) states that one of the advantages of prerecorded videos is that it reinforces student

comprehension by providing the student the ability to review the lectures as many times as needed. Students also felt they were able to comprehend the instructor's lecture more when they were able to view the video lectures while they were using the computer in the classroom.

Table 4.5
Advantages & Disadvantages of Distance Education Cited by Students

D.E. -Advantages	D.E. - Disadvantages
Flexibility - Coordinate videos with schedule	Unable to ask the instructor questions
Ability to rewind videos to reinforce learning	Limited by technology or location to view videos
Ability to watch videos at home	Difficult to incorporate learning strategies unlike the traditional classroom
Ability to pace your learning	Limits face-to-face interaction with other students enrolled in the distance education course

This was an important discovery in the study because the instructor had never considered that other students who were enrolled in her distance education course may have been applying that same approach to learning. Usually, the students would watch the video, take notes, and at some point use the computer to complete their assignments.

There were several disadvantages to learning in a video instruction course.

Students had difficulty concentrating during the half-hour video lectures. Students stated that the videos were too long to maintain the students' attention. Although the facilitator sometimes intervened during the video lecture to illustrate certain key points in the video, it appeared as if more student and facilitator interaction was needed during that time.

Timely student feedback has been cited as being a critical component of learner support (Delbecq & Scates, 1989). Students who receive timely feedback on their assignments respond more positively to the class than those who must wait for feedback (Delbecq & Scates, 1989). Effective use of reinforcement and timely feedback can be used to eliminate or reduce student apprehension about a new learning situation (Gagne & Wager, 1988; Gagne & Driscoll, 1988). In this study, untimely student feedback was found to be another problem for the students in the course.

Chris and Dell felt that not having immediate feedback from the instructor was frustrating for them at times when they needed assistance with their homework assignments. On the other hand, Marvin and Vivica felt that the instructor did respond to their questions in a timely manner. Marvin commented, "Not receiving immediate feedback didn't seem to be a real problem, as the instructor made herself readily available to questions and responded via email promptly." Wells (1990) suggests a turnaround time of 24 hours in a computer-mediated communication environment is reasonable.

Two disadvantages of video-based distance education were discovered in the study that were not addressed in the research literature. One of the disadvantages was being limited by technology or location to view the instructor's video lectures. The second disadvantage was the linear nature of the VCR and videos which limited how the students could take notes and study course materials.

Hodgson (1986) asserts that "the interrelationship between the support systems of a distance education course and the learning materials is not only important, but can be very influential upon the students approaches to learning" (p.301). In this study, the

instructor's course materials posed a problem for the students (see Table 4.1). The students revealed that the instructor's course materials needed to be updated for the course. They felt frustrated when the instructions for the assignments in the video lectures were different from the instructions on the instructor's web page. The students had a difficult time making the transition from the video to the printed course materials. They stated that they needed to see the instructions being explained on the TV screen before they could understand them in print. Although the instructor had explained to the students that she could not make the changes to the videos, they still could not make the connection that the changes made to the assignments would only be reflected in the printed course materials.

The students found it difficult to locate certain segments of the video lectures to review because the instructor's handouts did not contain a guide which would allow them to determine the recorded time when certain topics began on the video. Further, the video lectures did not present the lesson number before the lecture began. Marvin used descriptions of the instructor's hair styles and memorized what she was wearing as a learning strategy to identify the topic of the video lecture and to identify segments of the video lecture for which he needed further explanation. This technique was also used by other students enrolled in the distance education course.

Brophy (1997) suggests developing a technique in the prerecorded videos that incorporates signal transitions between topics, points out main ideas, and summarizes important points in the prerecorded video lectures so that students can follow along with the content. This way, students can fast forward or rewind to certain segments based on

the recorded minutes. Willis (1994) states that providing students with a framework or supporting structure is important for making connections and developing associations on which to attach new learning.

All four students had difficulty making a transition from remedial or lower-level course work given to them in the high school to handling college course work. Interview data revealed that the college course work was more difficult than the students' high school course work, requiring more homework and study time. Dell stated that she was glad that she was able to work with her classmates in a group because the assignments were really hard. Chris commented that there was a lot of homework assigned in the course. She felt that the assignments should be reduced so that she would have time to complete her assignments in class like she was able to do in her other high school classes. Marvin found that it was extremely challenging trying to balance both high school classes and the college distance education class. He felt that the distance education course should be offered in the Summer instead of during the school year. According to Vivica, they were being taught 4th grade level math at Silver State High School.

The students' comments addressed some important issues about the quality of education that they were receiving at Silver State North. It was evident from their comments that the students were not prepared for the rigors of a college curriculum. Classroom studies document the fact that disadvantaged students are expected to do less in the basic skill areas and that they actually receive less instruction on the advanced academic skills than do more advantaged students, and their curriculum is less challenging and more repetitive (Allington, McGall, & Franzen, 1989; Good &

Weinstein, 1986; Means, Chelemer, & Knapp, 1991; Oakes, 1986). Because of this, students have little enthusiasm for such curriculum and over time become passive learners in the schooling process, doing little but what they are required to do.

Motivation has been identified as one of the most critical factors that lead to a student's success in a distance education course (Willis, 1997). In this study, motivation (see Table 4.1) was determined by the students' attendance, participation in class, the ability to complete and submit homework assignments on time, and achieve high scores on their assignments. Being a college freshman and obtaining a good grade in the course were found to be extrinsic motivators among the four students. Factors such as students' aspirations and future goals to attend college were considered intrinsic motivators. All four students had future goals to attend college upon graduation and to obtain a college degree. Perhaps instructor and facilitator support also motivated the students to succeed in the course.

Of the four students in the study, Marvin and Vivica exhibited high motivation. They were both active participants, usually submitted their homework assignments on time, and scored high on their assignments. Dell and Chris on the other hand, exhibited low motivation in the distance education course. There appeared to be a relationship between students' motivation, class attendance, and self-directed learning. For example, students with high motivation (Marvin and Vivica) attended class on a regular basis, were active participants in class, self-directed learners, and performed well on their tests. Students with low motivation (Chris and Dell) were frequently absent from class, were not active participants, and overall did not perform well on their tests.

It also appeared as if the facilitator and instructor's support, which was recognized as an intervention, was a major motivating factor for the students in this study. Their physical presence was recorded in almost every learning situation in the study. Their support may have been an underlying key to the students' ability to complete the course. It is doubtful that Dell and Chris would have completed the course without the reinforcement that was provided to them in the classroom.

Out of the 25 students who completed the course, 12 (48%) received an A; 4 (16%) received a B; 7(28%) received a C; and 2 (8%) received a D (see Appendix C). Table 4.6 illustrates the high school students' overall performance on assignments, final examination, and grade for the course. Appendix B contains all of the test scores completed by the students. All four students successfully completed the course.

Table 4.6
High School Students' Test Scores

Students	Assignments (640)	Final Exam (200)	Total Points (840)	Percentage (100%)	Final Grade
Chris	480	140	620	74	C
Marvin	595	175	770	92	A
Vivica	635	190	825	98	A
Dell	485	140	625	74	C

Interview responses revealed that all four students felt that they benefitted from the college distance education course. They stated that the research skills learned could be

Interview responses revealed that all four students felt that they benefitted from the college distance education course. They stated that the research skills learned could be applied towards their research for other courses and for personal interest. Two students, Vivica and Marvin, planned on enrolling in another college course but stated that it would probably be in the “real” classroom. In fact, all four students preferred being in the traditional classroom where they could have more face-to-face contact with the instructor.

Table 4.7 and Table 4.8 compare and contrast the factors that contributed to the students’ progress in the college distance education course. Table 4.7 represents the positive factors and Table 4.8 represents the negative factors. The “X” highlights the factors that contributed to each student’s progress.

Table 4.7
Positive Factors Contributing to Students’ Progress

Students	Instructor Support	Facilitator Support	College Support	Peer Support	Video-Based Instruction
Chris	X	X	X	X	X
Marvin	X	X	X	X	X
Vivica	X	X	X	X	X
Dell		X		X	X

The academic support system, which included the college computer lab, facilitator, and instructor, had a positive influence on the students’ progress. It appeared that having access to technology created opportunities for the students to learn. For

example, Marvin, Chris, and Vivica revealed that the college lab's flexible hours of operation enabled them to use the facility at a time that was conducive to their schedule, and increased the amount of hands-on time needed to complete assignments.

Furthermore, the students were given the opportunity to work in groups while having access to their own computer or using their PC to work independently. Dell, on the other hand, was the only student who did not benefit from the instructor's or the college's support. Peer support and video-based distance education had a positive influence on all four students in the study.

Each student received an extraordinary amount of support from the instructor.

Data suggest that Chris and Dell received more support than Marvin and Vivica. Lack of school attendance and being behind in their course work may explain why they needed more support. Vivica and Marvin, on the other hand, seemed to be more comfortable with the course content, even though they still requested feedback from the instructor.

Table 4.8
Negative Factors Contributing to Students' Progress

Students	Untimely Instructor Feedback	Lack of face-to-face Interaction	School Structure	Limited Access to Technology	Social Status	College Environment
Chris	X	X	X	X	X	
Marvin		X	X	X	X	
Dell	X	X		X	X	X
Vivica		X		X	X	

A lack of face-to-face interaction and limited access to technology appeared to have been the greatest impediments to students' progress in the course. Social status limited student interaction among all four students in the distance education classroom. The high school setting was cited as a factor which contributed to Marvin's lack of attendance. Marvin did not like attending school at Silver State North. Dell on the other hand, did not like attending the distance education class on the college campus, but preferred staying on the high school campus with her classmates.

Summary

This chapter has provided a detailed discussion and a global analysis of how the four high school students in the study approached learning in a college course that used video instruction to deliver the course content. The expansion of the conceptual framework to address other factors which contributed to the students' progress was also discussed.

Vivica and Marvin were characterized as being self-confident and independent learners in the study. Chris and Dell were characterized as being group learners. Absenteeism was a common theme across all four student cases but for differing reasons in each case. Students with the highest attendance rate in class such tended to perform better on class assignments.

Limited access to technology, course scheduling, and school atmosphere were factors that constrained students' progress in the high school setting. Outside influences such as parenting, employment, and social commitments, also were contributing factors that constrained the performance of Vivica, Chris, and Marvin. The learner support

system played a critical role in the students' ability to complete the course. The instructor, facilitator, and college support were identified as interventions utilized to promote student success.

All four students benefitted from video instruction. Students were able to pace their learning and reinforce their comprehension by viewing the video lectures as many times as needed. However, not being able to ask the instructor questions during the video lectures and lack of timely feedback were cited as the disadvantages of learning in a video-based course. Motivation was identified as a factor that positively contributed to the students' ability to complete the course. Marvin and Vivica exhibited the highest motivation among the students in the study. However, all four students had future goals to attend college upon graduation and enjoyed the experience of being a college freshman. Although all four students were faced with obstacles in the course, they managed to persevere to successfully complete their first college course while they were enrolled in high school.

CHAPTER V

DISCUSSION

This chapter is presented in four parts. In Part 1, the salient findings of the present study are discussed. In addition, important themes are highlighted and discussed in relation to the research literature. Part 2 examines the implications of the results for educators involved in designing intervention programs that teach low-achieving high school students advanced academic skills in distance education. Part 3 presents the limitations of the present study and Part 4 provides recommendations for future research.

Part 1: Discussion of Results

What Factors In the Educational Setting May Support Or Constrain Student Progress In a Distance Education Course?

Limited Access to Technology

One theme constructed from the analysis was that limited access to technology in the high school setting was an obstacle to the students' progress in the college distance education course. Students' lack of progress was also influenced by factors in the school setting such as the curriculum and the school culture (Foster, 1989; Gay, 1988; Means, Chelemer, & Knapps, 1991; Nieto, 1990). Although data indicate that all of these elements were factors in students' lack of progress in this study, results showed that

limited access to technology was the biggest obstacle to student success in the distance education course.

In the beginning of the study, the students used the high school computer lab as their classroom for the course. However, limited access to computers became a problem when the number of computers available to use decreased from three to two. The students realized that they were being deprived of technological resources that were made available to other students in more affluent high schools. However, instead of allowing their frustration to deter them from participating in the course as well as the study, the students overcame this barrier by changing a potentially negative situation to a positive learning experience. They did this by working in groups and taking turns using the computer. Realizing that the computer lab was not going to work for the students, the researcher decided to change the setting of the study by making arrangements for them to visit the college to use the computer lab and electronic classroom. This decision proved to be extremely beneficial for the students because they had more access and more time to spend on the computer.

The most important aspect about the students' learning situation in the high school computer lab was that having inadequate equal access to technology did not deter them from learning. They made the appropriate adjustments to their learning environment. However, having access to the college computer lab provided the students access to technology and created another opportunity for the students to learn as a group while having individual access to their own.

Outside Influences

Outside influences emerged as a factor that constrained the progress of two students, Vivica and Chris. Utah (1988) states that certain environmental conditions such as family and socioeconomic status that contribute to a student's low achievement in the traditional classroom may also affect their achievement in distance education. Kember (1990) claims that students must be able to manage the demands of social, family and work commitments with their study time in order to progress satisfactorily in a distance education course. However, if students perceive that these responsibilities have a priority over their study time, then it will be difficult to schedule study time for the course along with their additional responsibilities. Kember's theory proved true in Chris' case, but not in Vivica's. Although she had a child to raise and worked part-time, Vivica was able to overcome outside influences that otherwise could prevent her from achieving her goal.

Chris had a difficult time balancing employment with her course work. She stated that her job caused her to become too tired to do her homework. Chris also began to miss class and would have a tendency to submit her homework late. Although Chris had difficulty balancing her course work and outside responsibilities, and did not score high on her assignments, she did successfully complete the course. Outside influences appeared to contribute minimally to Marvin's lack of progress in the course, and not at all in Dell's case.

What Is the Relationship of Classroom Culture, Including Student Interactions With the Instructor, With Each Other, and the Role Of the Listserv Discussions To a Student's Progress In a Distance Education Course?

Classroom Culture

The classroom culture created by the students in the study was somewhat unique in that they were not in a real distance education setting, but in a classroom environment in which a component of distance education was utilized. There were actually two settings for this study. Although the students worked as a group in the high school classroom, they were isolated from other students who were enrolled in the course. Also, they were constrained by their location and time to learn, which is one of the major differences between being in a physical classroom rather than a distance education setting where students learn independently (Lewis, Whitaker, & Julian, 1995).

The classroom also was a setting which led to social isolation. The isolation that the students experienced in this study was different from that of students enrolled in distance education courses in general. According to Ehrman (1990), Holmberg (1986), and Moore (1989) distance education students often experience a feeling of isolation from their institution and other students. Without contact with others, student motivation to continue with their course of study decreases as does their chance of success. However, in this study, two students experienced social isolation from the group when they failed to participate in class or were frequently absent. Collins and Green (1992) claim that the roles and relationships that students establish in the classroom influence what opportunities students have to learn and how the opportunities will be accomplished.

Because Chris and Dell did not adhere to the norms of the classroom, their opportunities to learn within the group were limited.

In distance education, student isolation can be minimized if there is a great deal of interaction between the students and the instructor online (Willis, 1990). In previous distance education courses, for example, the instructor recalled communicating with students at least twice a day during the week. In contrast, students enrolled in the instructor's classroom section of the same course would usually interact with her only during class time, which was held once a week. Furthermore, email was minimally used to communicate with the instructor outside of class.

Student Interaction

Results of the current study suggested that group learning and peer support were critical elements of the students' classroom community. Delaware-Chenango Board (1989) suggest that small group activities can be extremely helpful in molding appropriate behavior of low-achieving students. In this study, the students created their own opportunities for learning by engaging in activities as a group. In doing so, they were able to draw from the previous knowledge and skills that each student brought to class.

Of the four students, Vivica and Marvin were identified as the leaders of the group. They appeared to be the most knowledgeable and provided most of the support to their classmates. Vivica was initially a group leader, but as Dell and Chris continually requested her assistance, Vivica's role changed from tutor and group leader to more of an independent learner. This implication suggests that if educators are going to facilitate group work, they need to be aware of the changing roles and relationships of students in

the classroom and how those relationships may impact students' opportunities for learning within the group.

Online communication

Email did not have an apparent impact on the communication or interaction between the instructor and the students in this study. This was a common theme across all four student cases. Boshier (1990) states that students will be more motivated to use email because they feel less inhibited to express themselves in the presence of others. In this study, students used the online class listserv to introduce themselves to the entire distance education class and to pose a few questions to the class or to share information. On occasion, Marvin and Vivica used email to ask the instructor questions and also to interact with other classmates in the group. Keisler et al. (1984) found that in distance education, keeping an active on-line discussion is the most difficult part of the teaching process. This was true in the instructor's case. Although she encouraged the use of email, the students were reluctant to communicate in a nonverbal environment.

Although this study began as a distance education course, much of the interaction that took place in the classroom was face-to-face among the students in the study, the facilitator, and the instructor, instead of online via email. This amount of face-to-face interaction is not an option in a typical distance education environment. Students in a distance education environment spend a great deal of time interacting with the instructor and other students in the class via email. In this study, the students did not have to communicate with the instructor via email on a regular basis because she was accessible to them in the classroom. Had the instructor not been readily available, as is the case in

most distance education classes, perhaps the students would have needed to use email to bridge the gap.

The students' reluctance to communicate in an online environment raised an important issue in this study. In the beginning of the study, the instructor informed the students that she was not going to be present in the classroom to assist them on a regular basis. Yet, as the students progressed in the course, the instructor began meeting with them face-to-face, realizing that using email to communicate with them was not conducive to learning in their present situation. Furthermore, the instructor felt obligated to help the students who were in need of more assistance, even though such assistance mediated the distance aspects of the course.

This situation not only affected the way the instructor delivered instruction and interacted with the students, but it changed the entire direction of the study. Thus, the emphasis of the study changed from how the students approached learning in a distance education course, to how they approached learning in a classroom that used video instruction to deliver a college level course. The instructor also became the focal point of the study as she developed interventions to meet the educational needs of students who were having difficulty making the transition from their classroom environment to distance education. Given all that occurred, the students did not fully participate in a distance education course, but they did participate in an aspect of distance education, on a college campus, with a college curriculum.

What Is the Relationship of the Learning Environment, Including the Learning Space, Access to Technology, Home and Institutional Policies, to a Student's Progress In a Distance Education Course?

Was It Really a Distance Education Environment?

Although the study's main purpose was to focus on how low-achieving high school students approached learning in a video-based distance education course, it was actually the physical classroom setting which created a learning environment in which students could socially interact face-to-face, watch the prerecorded videos together as a class, and use the computers simultaneously. Thus, the distance education experience offered to those in the rest of the class, was missing for these students. However, video instruction, a form of distance education, was used in the classroom. During instruction, for example, students were able to reinforce their learning by stopping the videotape at certain intervals to enter the online demonstrations on the computer. Students were also given the opportunity to collaborate with classmates in the classroom to reinforce comprehension.

Table 5 illustrates the differences between a distance education class and the high school classroom setting in this study. In the distance education class, for example, there was limited face-to-face interaction with the instructor and facilitator. Students have access to their own computer or use the college computer lab to communicate with the instructor and classmates via email. Thus, email or another delivery system such as bulletin boards or compressed video is the mode of communication in the classroom. The students in distance education courses generally need to be independent learners because

they are usually located in remote locations, outside of classrooms, and do not regularly meet with the instructor face-to-face.

Table 5
College Distance Education Class vs High School Classroom

Distance Education Classroom	Researcher's Classroom
Limited Face to Face Interaction with Instructor	Increased Face to Face Interaction with Instructor
Limited Facilitator Support	Increased Facilitator Support
Limited Number of Onsite Class Meetings	Weekly Onsite Class Meetings
No Classroom Attendance	Weekly Classroom Attendance
Regular Use Email	Limited Use of Email
Access to Technology	Limited Access to Technology
Limited Number of Interventions (Support)	Increased Number of Interventions (Support)
Independent Learning	Group Learning
Video Instruction Outside of Classroom (Home)	Video Instruction Inside Classroom

The students in this study experienced an aspect of distance education incorporating the use of video-based instruction in a classroom setting, which enabled them to learn as a group. They had access to the facilitator and instructor on a regular basis; therefore, email was minimally used. Kember (1990) asserts that human contact through instructor and facilitator support (telecommunications or face-to-face) is the most important method of building student-institute affiliations, and that they are critical to the students' success in a distance education course. The students also had scheduled class

meetings that they were required to attend. Unlike students who enroll in distance education classes, students in the study were constrained by the lack of access to technology until they transferred to the community college.

Did Video Instruction Benefit the Students?

Although the students in this study did not learn primarily in a distance education environment, findings suggested that the students benefitted from learning through video instruction. All four students completed the course. Two students, Marvin and Dell received an A in the course while Dell and Chris received a C (see Appendix B). One of the major advantages of video-based distance education was that it allowed the students to pace their learning. Boston (1990) and Holmberg (1986) among others, have found that distance education allows students to learn at their own pace. This appeared to be true for the students in this study. Video-based instruction was extremely beneficial for the students who missed class or for those who needed more time to absorb course content.

Not only were they able to view the course lecture at a time that was conducive to their schedule, but they also were able to rewind and pause portions of the video to reinforce their learning. These findings support the research literature which indicates that distance education provides a form of individualized instruction for the student (Crooks, 1990) and reinforces student comprehension by providing the student the ability of reviewing the lectures as many times as needed (Crooks, 1990). One theme that was constructed through data analysis was that video-based distance education promoted self-paced learning, which enabled the students to complete the college distance education course.

Bates (1988) believes that distance education courses that incorporate video-based, televised instruction are especially useful to students who are struggling, because the visual medium allows them to understand concepts through the use of concrete examples. The students reported that another benefit of video instruction was that being able to view the videos in the classroom while they were working on the computers reinforced their learning because they were able to comprehend the instructor's lectures more when they had access to both the videos and the computers in the classroom. This delivery method created a learning environment in which students became active participants. It also provided students the opportunity to reinforce their learning by modeling the instructor's online demonstrations, discussing lecture content and assignments with classmates, and receiving feedback from the facilitator, simultaneously.

Video-Based Learning: Disadvantages

While results of the study demonstrated that the students did benefit from learning in a video-based environment, there were some disadvantages. For instance, the flexibility of video instruction proved to be ineffective for some students, especially for Marvin, Dell, and Chris who found that it was extremely difficult to watch the videos at home. They felt more motivated to view the lectures in the classroom where the facilitator helped keep them focused.

The prerecorded videos were too long in length to maintain the students' attention. Students had difficulty concentrating during the half-hour video lectures, became bored, and lost their focus. As a result, they would have to rewind and review the missed portion of the lecture. Data suggest that more student and facilitator interaction

was needed during this time. Moore and Kearsley (1996) state that the single most important skill that educators must develop is to make their students active participants in their distance education program. They suggest teaching techniques such as asking questions, and promoting group discussions.

Considering these limitations, one can recommend that an instructor who uses video instruction can or should incorporate certain strategies into video production. For example, during video production the instructor could include a segment in the video which instructs the students to pause the lecture and write down some questions or have a brief discussion if the videotape is being viewed by a group of students. These questions would be sent via email during a certain time period. During that time the students would be encouraged to participate via email and discuss the answers to the questions. A similar strategy was used in this course. After the assignments were completed, for example, certain students were asked to submit their research strategies via email for completing the questions on the assignment. Sometimes the students would respond by suggesting a better research method for finding an answer.

In addition, Holznagel (1998) suggests that the facilitator should use the student-centered approach which entails creating opportunities for active participation and interaction among students, and responding to the needs of the student. Although the instructor did not ask the students in the study to submit their research strategies via email, Marvin responded to another student's email message by sharing his research method for the same question.

Timely Feedback

Timely student feedback has been cited as being a critical component of learner support (Delbecq & Scates, 1989). Students who receive timely feedback on their assignments respond more positively to the class than those who must wait for feedback (Delbecq & Scates, 1989). In this study, the instructor's inability to provide timely feedback via email frustrated some of the students and appeared to delay the progress of others in the course. Wells (1990) suggests a turnaround time of 24 hours is reasonable. The students also did not like having to wait for the instructor's response to their email messages because they normally had to wait an entire day to receive a response from the instructor. As a result, the students would usually wait until the instructor met with them in the classroom. Although there were times when the instructor responded to the students' email messages within the 24-hour period, data suggested that the students still wanted immediate feedback from the instructor.

The students' need for more feedback and instructional support may have been due to lack of self-confidence and maturity. According to the research, most students who seem to do well in distance education courses are 27 years of age or older and feel comfortable learning in an environment where the instructor is not present in the classroom (Willis, 1990). Thus, it could be that the students in the study needed more time to mature and to adapt to becoming independent learners.

High School Environment Versus College Environment

Kember (1990) indicates that the inclusion of extrinsic motivators will help ensure student success in distance education programs. He further concludes that if the subject

matter is compatible with the students' interests, then intrinsic motivation will be heightened. In this study, students were found to be both extrinsically and intrinsically motivated in the college distance education course. Obtaining a good grade in the course was cited as an extrinsic motivator.

Deci and Ryan (1991 cited in Brophy, 1998) believe that social settings promote intrinsic motivation when students are inherently motivated to feel connected to others within the setting, to function effectively in it, and to feel a sense of personal initiative while doing so. In this study, students cited their experience of being a freshman on the college campus, having personal goals, high expectations, and aspirations to attend college as intrinsic motivators. Holmberg (1985) states that a distance education program will support student motivation and promote learning satisfaction and effectiveness if it is provided in such a way that students believe that the subject of study is relevant to their individual needs and feel a sense of rapport with the distance education institution.

Kember (1990) asserts that the students' ability to integrate into the academic environment will determine their ability to successfully complete the course. Although this study was not intended to demonstrate a causal relationship between student motivation and distance education, three of the four students reported being motivated by their attendance on the college campus. The students felt that the college environment gave them a sense of status and independence, something that they did not experience on the high school campus.

One student, Dell, did not like being on the college campus. She preferred staying at the high school campus where she could be with her friends. Perhaps Dell may have

felt a sense of self-identity on the high school campus that was lacking on the college campus. This was an unanticipated consequence of the change from the high school to the college setting. The assumption was made that all of the students would welcome the transition because they were being exposed to amenities as well as a collegiate atmosphere that were not available to them in the high school setting. Yet, it appeared as if the college environment intimidated Dell. As indicated earlier, she struggled to keep up with the college work. Thus, being on the college campus may have reinforced her lack of self-confidence about performing at a higher academic level.

All four students were motivated by their aspirations to attend college, future educational goals, and their desire to obtain a good grade in the class. Research has shown that students have a natural tendency to be intrinsically motivated to learn when they focus on personal goals, when they do not have to fear failure, and they perceive what they are learning as being personally meaningful and relevant (Clifford, 1984; McCombs; 1994; Nicholls, 1985). Of the students in the study, Marvin, Chris, and Vivica had high expectations that they would perform well in the course. They were excited about being given the opportunity to enroll in their first college course; thus, it was important for them to perform well.

Another aspect of motivation addressed by Ehrman (1990) is that the need for face-to-face interaction may have an effect on the motivation of distance education students to complete the course. In terms of her ability to perform well, Dell only appeared to be motivated when working with her classmates in a group or when the facilitator or instructor was at her side to assist her with course assignments. She was

seldom seen working independently. Although Dell was not in a total distance education setting, the results suggested that she would have benefitted from more face-face interaction. The instructor felt that she had to constantly motivate Dell in the class because she realized that Dell would have possibly dropped out of the course without the instructor's support. While Dell did not demonstrate the qualities of an independent learner and relied on a great deal of instructional support to motivate her, she still stayed with the course and managed to succeed in earning a grade for college credit.

Even though each of the students performed at a different pace in the study, they all completed the course. In comparison to the 25 students who completed the course, Vivica and Marvin received an A and ranked in the upper percentile of the class, while Chris and Dell received a C (see Appendix B) and ranked in the lower percentile of the class. (see Appendix C). The students did not report their satisfaction or lack thereof with their grades. However, the students revealed that they benefitted from the course and were able to apply the skills they learned to a new learning situation. Dell stated that she used her library research skills to show her mother how to search the online catalog, which was one of the research tools that she learned about in the course.

High School Access Versus College Access

As previously noted, the limited number of computers with Internet access in the high school computer lab initially had a negative impact on students' progress in the course. However, the students were able to overcome this barrier by using the college computer lab. In this setting, students were given the opportunity to work in groups while having access to their own computer with Internet connectivity or use their PC to work

independently. This was not an option on the high school campus because there were only two computers available for students to use. A common theme that emerged across the cases was that access to computers and the Internet increased the students' productivity in the classroom. The students felt that they were more productive in the college computer lab than in the high school computer lab because access to their own computer and the Internet meant that they could spend more time online working on their class assignments. Having access to the college computer lab really benefitted Vivica because she did not have a computer at home. In addition, she was able to use the facility during her break from work. She stated that she was able to get a lot of work done in a short amount of time.

School Policies

The researcher did not find specific home or school policies that contributed to the students' lack of progress in the study. However, there are two elements of the high school setting appropriate to discuss. First, the child care center provided Vivica support which enabled her to attend school. Yet, there were times when this support was withdrawn because of school policy. The staff could not take care of Vivica's child when he was sick. As a result, she needed to miss school to take care of her child.

There was insufficient evidence to determine whether or not the high school administrative support was an obstacle in the students' progress. However, the study would have been impossible to complete without the approval of the principal. The principal inquired about the students' progress a few times, but she was not actively involved in the study.

What Is the Relationship of the Content and Methods of the Course
To a Student's Progress In a Distance Education Course?

Course Materials

Students identified several problems with the instructional materials assigned in the course. The videos need to be updated to reflect current assignments and instructions that were in the students' syllabus and on the WWW site. Students had difficulty locating segments of the video lectures because the videotapes were not labeled by lesson number. Considering all of the factors constraining the students' progress such as insufficient access to technology, limited use of email, the length of the video lectures, and inconsistent course materials, it was apparent that the course needed to be updated.

College Course Work

All four students had difficulty making a transition from remedial or lower-level course work given to them in the high school to college course work. The students revealed that the college course work was more difficult than their high school course work and required more homework and study time. These comments suggested that the high school curriculum was not as intellectually stimulating nor challenging to the students as the college course.

What Is the Relationship of the Academic Support System, Including Classroom
Assistance, Assistance at Home, and the Role of the Instructor to a
Student's Progress In a Distance Education Course?

Academic Support

Three elements of the academic support system, the college campus, instructor, and facilitator, appeared to have a positive influence on the students' progress in the

course. The college for example, provided flexible hours of operation and access to technology for the students that was not available to them on the high school campus. In this study, the need for face-to-face interaction was a common theme that emerged across the cases. Data suggested that the students benefitted from having the instructor's presence in the classroom to provide them with guidance.

This is important because it distinguished the students in this study who were only exposed to certain components of a distance education course from those in a typical distance education setting. The relationship constructed between the students and instructor was a more traditional tutoring relationship than is expected in a typical distance education course. The students indicated in their interviews that they preferred the instructor taking on a traditional role of providing immediate feedback.

The instructor and facilitator also provided a great deal of onsite assistance to the students. Lorentsen, Dirckinck-Holmeld, and Christensen (1989) and Mason (1990b) state that regular contact with an instructor or facilitator strengthens the ties with the institution, acts as a motivating factor, and increases the chance of success. In the beginning of the study, the instructor envisioned herself as interacting more with the students via email than face-to-face. However, she discovered shortly after the course began, that communication via email was not going to be an effective mode of interaction with the students because they had difficulty adjusting to their new learning situation. Thus, to intercede, the instructor began regular face-to-face interactions with them. This change made the instructor's dual role as the researcher very difficult because she had to be objective in a somewhat subjective situation. The researcher found it to be extremely

challenging trying to derive theory from a learning situation in which she was actively involved as the instructor, only to realize that in the end, she became a major factor of the students' success. Further, the researcher had to face the realization that the distance delivery method was not effective with these students under these circumstances.

The facilitator also played a unique role in this study, one that is not typical in the distance education environment. He stayed with the students in almost every learning situation. He transported the students to and from the college campus and spent time with them during some of the class sessions on campus. In addition, he provided technological and instructional support, and set up the TV/VCR and the computers in the classroom as well. Although he lacked organizational skills, which delayed the progress of the students at times, it was obvious that he was responsible for the weekly activities that took place in the study. Schlosser and Anderson (1994) indicate that in the distance education setting, the facilitator usually operates equipment, distributes instructional materials, answers questions, offers encouragement to students, and assists the remote instructor. However, they do not specify the amount of contact that is made between the facilitator and the students. Furthermore, it does not appear as if most distance education facilitators spend as much time with students as the facilitator did with the students in the present study. The role of the facilitator was more inclusive than is typical in distance education, which established a relationship with students that was similar to a traditional classroom.

Home Support

Kember (1990) states that the home environment will likely have an influence on the students' progress in a distance education course. He concludes that if the family

members see the need for study as an important aspect of the students' interest, then they are likely to support him or her in spending time on study activities. On the other hand, if the family perceives family duties as having priority over study time, then it will be difficult to integrate periods of study with the family (Evans, 1994; Haile, 1986; Kember, 1989, 1990; Naidu, 1989). In this study, home support could not be verified through student interviews. Only in Vivica's case was lack of family support evidenced in the study.

What Affect Do Individual Learner Characteristics Have on Students' Progress in the College Distance Education Course?

According to the conceptual framework, students with certain individual background characteristics usually have a difficult time progressing in a distance education course and drop out unless certain interventions are employed (Kember, 1990). In this study, the researcher discovered that particular a intervention played a key role in the students' success. The instructor and the facilitator continually created opportunities for the students to learn by providing them with guidance, access to technology, positive reinforcement, motivation, and by having high expectations for them. The instructor and facilitator even worked one-on-one with some of the students to reinforce their learning. Moreover, the researcher found that all of these elements had to be incorporated into the classroom in order for the students to succeed.

It is important to note that even though some students appeared to be more self-directed than others, all of the students needed guidance at some point in the study. Rist (1970) states that the success of an educational institution and the instructor should be

measured by the treatment and expectations of those not achieving. Furthermore, the role of the educator should be to facilitate the increased access to education of disadvantaged populations and not create self-fulfilling prophecies, which may impede or prevent their educational attainment (Foster, 1989; Ogbu, 1978; Rist, 1970).

One theme that was evident across the four cases was that the students' participation in the course did not fit the profile of low-achieving students as described by researchers (Donmoyer & Kos, 1993; Ogbu, 1978; Wells, 1990) who characterize them as having low self-esteem and GPA's, and lack self-confidence and motivation. As the study was initially conceived, the students were identified by the school as low achievers. They were expelled from mainstream high school, placed in a school for credit deficient students, and labeled as potential dropouts. However, the researcher discovered that when placed in a higher achieving situation where instructor and facilitator support were made available, these students were able to successfully complete the course.

Wells (1990) states that in a distance education course, the most critical period is about one-third to half way through the course. It is during this time that students will either drop out because they are unable to keep up with the course work or they will complete the course. Although, Dell and Chris missed several classes and scored low on their assignments, they had enough motivation and support from the instructor to complete the 15-week course. In this study, students' success was measured by their ability to complete the course as opposed to those students who dropped out. Initially, a total of 45 students enrolled in the distance education course, but only 25 completed the

course, including the four high school students in this study. This kind of attrition rate in the instructor's course varies each semester.

It is also important to discuss the issue of school attendance and absenteeism as it relates to the students' progress in this study. When the framework for the study was initially developed, absenteeism was included as a student characteristic to explain which factors may have an influence on the students' lack of progress in the course. A component of Kember's (1990) model was also included to demonstrate how absenteeism and other background factors could have an influence on students' ability to complete the course. According to researchers (Donmoyer & Kos, 1993; Wells, 1990) absenteeism was one of the characteristics used to describe the low-achieving student and was used to show that it had a negative affect on the students' performance. However, in this study it was apparent that absenteeism was really the outcome that was influenced by factors such as course scheduling, part-time employment, illness, school atmosphere, and parental responsibilities. Moreover, these factors were never mentioned in Kember's (1990) model nor in the research literature.

It is difficult to determine how low attendance contributed to the students' performance in the distance education setting. Neither student attendance, nor classroom schedules exist in the distance education. The students were only required to submit their assignments via email according to the due dates on the course syllabus. However, in this study, students had to be in class on certain days and certain times to participate in class, which eliminated a significant distance learning element of the course. Low attendance,

or absenteeism, was also used to explain why some students performed better in class than others.

Summary and Conclusion

In summary, the findings from cross case analysis identified which factors influenced the progress of high school students enrolled in a college course. While these four high school students initially were identified as low achievers in their school, results of the study indicated that they were able to complete a college level course. While the attrition rate among college students in this course reflected the norm, the attrition rate for these high school students was low in comparison. Four of the five high school students were able to complete the course, and two were highly successful and two were moderately successful in terms of the grades they received. However, Trueba (1988) reports that many studies provide examples of students who may be categorized as having low GPA's and high absenteeism and other conditions, yet still be quite successful in school. Further, these students can be quite successful when the classroom, school structure, and teacher's expectations of students change. It is to their credit that they were able to complete a college level distance education course, given their circumstances.

Results of the study also demonstrate that when video instruction is combined with a support system that includes an instructor, facilitator, and college support system, low-performing students can succeed in an advanced academic course. On the other hand, elements such as adequately prepared course materials, timely instructor feedback, and face-to-face teacher/student interaction must be incorporated into the distance education to promote learner progress. Although the students successfully completed the course, the

researcher concluded that the delivery system was not appropriate for students who needed immediate feedback and face-to-face interaction with the instructor.

Part 2: Implications For College Educators Involved in Enrolling At-risk High School Students in College Courses

Are the Students Really Low-Achievers?

The students selected for this study were labeled by the school system as low-achievers and were expelled from high school because of low attendance, low GPA and credit deficiencies. Yet, throughout the course, the students did not all fit the low-achieving student profile as described by researchers (Donmoyer & Kos, 1993; Dille & Mezack, 1991; Ogbu, 1978; McWhirter, 1993; Wells, 1990; Willis, 1994). As noted by Dille and Mezack (1992) and Willis (1994), characteristics of high achievers in a distance education classroom include self-confidence, high expectations and GPA's, independence, self-motivation, and aspirations to attend college. Three of the four students in this study, exhibited those characteristics. One student, Dell, fit the profile of a high risk student in distance education, who is characterized as having a low GPA, prefers a great deal of structure, face-to-face lecture and teacher interaction (Dille & Mezack, 1991; Willis, 1994).

Donmoyer and Kos (1993) and Foster (1993) state that if the pattern of low-achieving students' achievement is not reversed, it may develop into a self-fulfilling prophecy that could include school failure. Natriello (1990) suggests that to improve student achievement, schools must encourage student involvement in academic and

extracurricular activities by stimulating students' interests, increasing remedial skill deficiencies, and rewarding their efforts.

Additional reasons that accounted for the students' absenteeism in class were physical fatigue from employment, course scheduling, school atmosphere, illness, and parenting. It was also possible that these same factors contributed to their lack of progress in mainstream high school and contributed to their low attendance rate in school. However, the school system's labeling of students who are capable of learning at the college level may prevent them from having the opportunity to succeed in life.

Can High School Students Achieve In a College Distance Education Course?

Although all four students successfully completed the course, the researcher concluded that the students did not learn in a "true" distance education environment. The students had a difficult time adjusting to the distance education setting. Two students were reluctant to use email and wanted immediate feedback; three students needed instructional support during the video; and all four students wanted more face-to-face interaction with the instructor. On the other hand, the students did benefit from the video instruction component of the course. Learning by prerecorded videos allowed the students to reinforce their comprehension by learning at their own pace. This component was critical in their ability to successfully complete the course.

Although the students did not fully adapt to their learning environment in this study, the researcher believes that under certain circumstances, video instruction is a viable distance education tool to use. Ehrman (1990) states that the degree of personal interaction required may be determined by the nature of the distance education course and

the individual's learning style. Given the outcome of this study, in similar circumstances, educators should look at other delivery systems and how they can be integrated into the course. For example, video instruction could be incorporated with two-way interactive video. This would create a distance learning atmosphere where the students could interact in real time periodically with the instructor, while continuing to learn at their own pace by viewing prerecorded video lectures.

Furthermore, newer distance education technologies such as using the World Wide Web, and digital streaming video via the Web to deliver instruction (Latchman, Salzmann, & Gillett, 1999; Madjidi, Hughes, & Johnson, 1999; Smith & Bencater, 1999; Riedling, 1999) may also be an effective way to teach low-achieving high school students in a distance education course. Digital video, for example, would allow accessing any part of the video via the World Wide Web without having to rewind certain segments. However, educators will have to address issues such as the digital divide or inadequate access to technology for students who may or may not have access to technology at home, or who may not be able to afford to update their computers to handle digital video.

Sewart (1988) suggests that a human intermediary is necessary to individualize the distance education experience and provide support to bridge the gaps between the student and teaching or the materials provided by the program. Thus, the instructor may want to develop a student profile such as a demographic survey (questionnaire) that could be completed by students before enrollment to identify previous distance education courses taken, the type of distance education course, number of courses currently enrolled

in, employment status, and number of dependents, and learning style. The information may be an effective way for instructors to examine the backgrounds of students enrolled in the distance education program and identify the appropriate intervention to meet the educational needs of the students. For example, some students may do well in a distance education course that is strictly web-based, where the visual medium is the computer and the graphics are integrated into the WWW pages. Thus, the students may only be required to have access to a computer and the World Wide Web.

There is also a need to expose students to distance education before actually enrolling them in the course. This way, students can become familiar with the environment and make the needed adjustments to progress in the course. The instructor's and the students' expectations need to be discussed before the course begins. Resnick, Bill, and Leer (1991) state that students need higher self-expectations for learning, coupled with intensified and careful application of instructional methods. Teacher expectations may also have an impact on the students' belief that they can achieve in a higher learning situation.

The students in the study needed support from three different areas: technology, facilitator, and the instructor. All three components worked together in order to promote learner success by creating a triangle of opportunity for the students to progress and to successfully complete the course. Further, the responsibilities of the facilitator may not be limited to technology support. In this study, he provided technology support at home and at school, instructional, and transportation support. He was more than just the liaison between the instructor and the students. Support also occurred in the form of peer

interactions such as a student providing instructional assistance to another student. It provided reinforcement for the student who needed the additional guidance to progress in the course.

Where students learn may have an impact on how they approach learning. In this study, students became frustrated when they did not have adequate access to technology in the high school computer lab. As a result, they had to be transported from the high school to the college campus so that they could spend more time on the computer. This transition benefitted some students but not others. Three students enjoyed the experience of being a college freshman on campus; however, one student (Dell) preferred to be on the high school campus. In fact, she missed several classes that were scheduled at the college. It appeared as if the transition may have promoted learned helplessness (Thomas, 1979) within Dell who may have doubted her ability to perform at the college level. Mann and Sabatino (1985) state that a student is likely to attribute his or her belief of not being able to perform academically by thinking that they are “too dumb”.

While all four students completed the course, findings suggest that Marvin and Vivica benefitted the most from the interventions. Self-motivation and self-directed learning combined with the use of video instruction, access to technology, minimal instructor and facilitator support appeared to be the key to their success in the college distance education course. Chris and Dell, on the other hand, were not as self-motivated as Vivica and Marvin, were not considered self-directed learners, and needed a great deal more of instructional support to progress in the course because of their high absenteeism rate in class. The instructor had to spend a great deal of time providing individualized,

instructional support and motivating Dell and Chris, because they had fallen behind in class. Dell appeared to need more attention than any of the other students. In fact, the instructor believed that if she had not intervened and continued to motivate Dell and Chris, it was possible that they may have dropped out of the course. Therefore, educators may want to consider all of these factors when selecting low-achieving high school students for a college distance education course. These factors may determine which students will successfully complete the course and those who may drop out. Furthermore, educators may be able to determine which students may need additional interventions to succeed in a college level distance education course.

Should Low-Achieving High School Students Enroll in College Distance Education Courses?

Educators should be prepared for some of the problems encountered in teaching low achieving high school students in a college course that incorporates distance education such as dealing with students who lack motivation, outside influences which may constrain their progress, technical difficulties which may cause students to become frustrated and give up, lack of face-to-face teacher/student interaction during video instruction, and providing timely feedback to the students. An instructor may also need to provide more face-to-face interaction to check for student comprehension throughout the course. Yet, each classroom, student, and learning situation is different. The challenge in this type of learning situation is creating a learning environment where students are not reluctant to ask for help or to interact with each other and the instructor via email. The use of emoticons, for example may be an effective way for students to develop nonverbal

communication (Bielman, Putney, & Strudler, 2000). In addition, desktop videoconferencing or real-time chat may also encourage students to be comfortable with interacting with the instructor and other classmates. In this study, the instructor believed that students may have been reluctant to email her because they may not have been sure how to express themselves in words.

Did the Conceptual Framework Support the Research?

The conceptual framework was designed to address the educational needs of a special student population who were in an at-risk situation. However, during the global analysis phase of the research process, other factors were discovered that could not be explained within the model. As a result, the framework was expanded to address factors such as outside influences, which had an impact on the students' lack of progress. For example, Kember (1990) discussed how background factors would influence students' progress in a distance education course. However, results of the study suggested that other factors such as parenting and employment, contributed to their lack of progress. Furthermore, these factors needed to be further expanded upon to explain how certain obstacles contributed to two students, Chris and Vivica's lack of progress in the course.

While the results of the study implied that these factors negatively influenced the students' progress, the model did little to explain how and which components within the learner support system could intervene to help the students balance their outside commitments, high school course work, and college course work, and still be able to successfully complete the course. The various types of interventions used to help the students progress in the study should have been included in the model to demonstrate

how the students approached learning when support was provided during the course. This may also have given the researcher a broader perspective of how her role as the instructor would change during the course of instruction. Thus, there is a need to develop a conceptual framework that expands the researcher's model to discuss how intervention programs influence students' progress in a distance education course that uses a combination of distance and traditional classroom teaching.

The researcher felt compelled to expand her interventions outside the bounds of Kember's Model (1990) in order to address the characteristics of these learners. Initially, the researcher began the study thinking that she had students with similar characteristics, only to discover that she was teaching two types of learners: self-directed learners and those without self-direction. Further, these students had different needs, requiring different interventions. The researcher had to again expand Kember's (1990) framework to address these factors.

Need for Advanced Academic Courses in Alternative High Schools

The results of the study corresponded with those of other researchers who state that not all low achieving high school students lack motivation and self-discipline, or cannot perform well in advanced academic courses (Means, Chelemer, & Knapp, 1994; Foster, 1989; McCombs & Pope, 1994). Furthermore, the premise that low achievers cannot be taught advanced academic skills was not evident in this study. Results of this study confirmed that some students require more academic preparation in high school to handle the rigors of college course work. However, the level of academic preparation that is needed may not be available to the students if they are not performing according to the

school's standards. If this is the case, distance educators may want to encourage students to enroll in a college preparation course, such as College Study Skills or Library Research before attempting to enroll them in higher academic courses at the college level. It also may be beneficial for the students to enroll in a lower-level college course on campus before enrolling in a college distance education course. This transition would give the students an opportunity to adapt to the college setting and assess their academic ability in a higher learning situation before enrolling in an upper academic college course.

Part 3: Limitations of the Study

One of the major limitations of the study was that the researcher was unable to study how the students approached learning in a distance education setting. Although the change in location from the high school to the college campus benefitted some of the students, it removed the distance element of the course. Further, due to technical difficulties, the researcher was not able to incorporate real-time communication between the instructor and students. Using desktop video conferencing or the chat room may have reduced some of the students' anxieties about not being able to interact with the instructor face-to-face, but the researcher was unable to make a determination as to whether it would have been a contributing factor in the students' progress.

Distance education is one intervention of many, but has the promise, especially for students who may be moderate achievers but who aspire to a college education. However, there may be other interventions that may prove to be as effective or better than distance education that can be used to help students transition into higher education.

The researcher's role as participant/observer was both an asset and a limitation. Being the instructor/researcher was difficult. It was evident that researcher bias existed with respect to wanting the students to succeed in the course the same way as the instructor would want any student to be successful. It was also apparent that the researcher placed more of an emphasis on Vivica than the other three students in the study because she represented the model of success. On the other hand, it was evident that the researcher did not give the same amount of attention to Dell because she was very seldom absent from class and was considered to be lazy. During the Fall 1999 semester, Marvin, who was a senior at Silver State High School, emailed the instructor and thanked her for giving him and his classmates the opportunity to enroll in a college course. He stated that he had continued to watch the instructor's video lectures on Channel 10 and revealed that he learned more by watching the lectures the second time around.

The researcher also had difficulty obtaining information from the students without giving them the impression that she was prying into their personal lives. Usually, the researcher would have to wait until the students volunteered the information before she could ask them personal questions. For this reason, the researcher had to speculate to explain certain student behaviors in the study.

There are no exact answers to important questions, such as how students approach learning in a college level course when they are not constrained by limited access to technology. In the current study for example, students were enrolled in a high school in which limited access to technology resources contributed to their lack of progress in the course. However, in the beginning of the Fall 1999 school year, the two juniors, Marvin

and Dell, enrolled in Silver State North's newly built high school. The school's computer lab was equipped with 20 new computers with networked Internet access. Had there been adequate and equitable access to technology in the high school setting during the prior year, this study may have resulted in different findings.

This study also focused on a small number of students enrolled in the college course. Could the study be done with 25 or more students if they had access to technology? If so, would the facilitator and instructor be able to effectively meet the educational and technical needs of the students? The researcher believes that if 25 students were going to be selected, the researcher conducting the study would need to make sure that there was an adequate number amount of computers for the students to use. In addition, the increased number of students may also make the technical and instructional support more labor intensive. Thus, the researcher should make arrangements for additional student support in the classroom.

Finally, the case study methodology has its advantages, but there are limitations. For example, the labor intensity of the qualitative case study approach limits the number of cases that can be addressed. As is typical in case study research, conclusions of the study's results cannot be extended beyond the boundaries of the selected case studies and the learning situation. The observation of the four individual case studies was limited to one high school, and one learning situation, and was not intended to be generalized to all populations. However, the insight gained by studying the four cases in relation to each other offered implications for distance education courses in general and as illustrated by other researchers.

Part 4: Recommendations For Future Research

Research concerning distance education has a history of 100 years, focusing on areas from correspondence courses to courses taught via video-based instruction. Because little research concerning distance education and the academic performance of low-achieving high school students enrolled in college courses has been conducted, there is still a need to continue studies in this area.

Although this study identified individual learner characteristics which influenced the students' progress in the course, more research is needed in the area of learner characteristics and academic performance, and which characteristics change when students are given the opportunity to achieve in higher learning situations. Furthermore, research is needed to determine how certain characteristics positively and negatively influence students' progress in a college course and the type of interventions (learner support system) that should be implemented to ensure a higher level of academic success.

The researcher utilized prerecorded videos to deliver instruction to the students in this study and found that there were several advantages and disadvantages to learning in a video-based course. However, research needs to be conducted to find out what type of distance education delivery system, classroom setting, and instructional strategies work best with low-achieving students.

Results of the study revealed that the students were faced with several obstacles that may have contributed to their lack of progress in the course. This issue of access to technology needs to be further investigated to identify how low-achieving high school students approach learning in a college level distance education course when the

academic support system, which includes the high school administration, and adequate and equitable access to technology on the high school campus, is in place.

The students in this study indicated that the college course was extremely challenging for them. They stated that they were not prepared academically at Silver State High School to handle the rigors of college course work. Thus, a study needs to be conducted to determine how low-performing high school students perform academically in a college level distance education course when they have been previously enrolled in a college preparation course in high school.

The researcher was also the instructor in this study. As previously noted, playing a dual role created researcher bias in some situations. Therefore, the researcher conducting a new study should consider having someone else teach the course so that he or she can observe classroom interactions between the instructor and students and analyze the data more objectively.

Epilogue

In the Fall of 1999, I had the opportunity to visit Silver State High School's new school campus. It was quite a contrast from its other campus. The new campus was landscaped with palm trees, desert rock and grass. The school was painted in bright, southwest colors such as peach and green. There was definitely a change in the school atmosphere. Upon observation, I noticed a change in the students' appearance, especially their clothing. They appeared to be neater looking, similar to the "college look". It was obvious that the new school setting had a positive affect on students' morale. I also

noticed a change in the school principal's and staffs' appearance. They, too, looked more professional in their dress.

Silver State High School is now equipped with two new computer labs. There are approximately 20 computers in each lab and both computer labs are networked for Internet access. Thus, students are no longer limited to two telephone lines and two computers. The technology coordinator and the computer instructor expressed an eagerness to enroll more students in the college distance education course. They are both optimistic that the students transition will be a lot less complicated than before because they now have the technology support needed to help the students succeed.

In the Spring of 2000, I was informed that Vivica was planning to move to Phoenix, Arizona to enroll in a computer school. Marvin was planning to enroll in a culinary of arts course during the summer at the community college. Chris had to return to Silver State North during the Fall 1999 to take another course to fulfill her graduation requirements. Dell was transferred to Silver State High School, East. The principal of Silver State High School North recently applied to the University of Nevada, Las Vegas, College of Education, Executive Leadership Doctoral Program. Her goal is to investigate the impact that distance education may have on at-risk students in a high school setting.

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APPENDICES

APPENDIX A1

Interview Question Guide

Interviews will be conducted via email between the researcher and the participants. It will be designed to address the focus of the study and to address the research questions.

1. What were your expectations at the beginning of the course? Please describe any concerns that you had about taking a class with other college students. What kind of goal did you set for yourself? Please explain. How determined were you to complete the course? (Research question 2)
2. Describe your learning experience being taught by an instructor who teaches through prerecorded videos. What was your experience with having the opportunity to rerun the video-taped lectures? What are the advantages of learning by video instruction? What are some of the disadvantages? How did you feel about not receiving immediate feedback from the instructor? What was the biggest obstacle to learning in a distance education classroom? How did you overcome the obstacle? What kind of support did the college & high school provide for you? What kind of support did the facilitator provide? (School structure & academic support) (Research question 1 & 3)

3. Describe some of the similarities and differences between the distance education classroom and your high school classroom. Describe how you felt participating in a class where you did not have immediate access to the instructor and were unable to interact with other classmates face-to-face. Did you look forward to attending class? What did you enjoy most about the course? Which assignments did you find to be the most interesting? (Research question 3)
4. Describe your reactions to communicating with the instructor and classmates via E-mail. How did you feel about asking classmates about homework? What are some of the similarities and differences talking online with students as compared to the classroom environment? (Classroom culture) What effect did communicating with your classmates via the listserv have on your ability to complete homework assignments? Did it affect your willingness to be a part of the class? As a student, did you feel like you were a part of the real (traditional) class in the distance education course? What kind of assistance did you provide to other students?(4)
5. Which of the following tools did you find most effective in helping to you succeed in the course: email, desktop videoconferencing, video lectures, instructors home page. Was the technology required for this course easily accessible to you? Did you have difficulty accessing the technology, ie: computers to complete your assignments? Do you believe that the Internet can be used effectively for teaching a course? (Research question 1)
6. How much time did you spend on homework outside of school? Discuss the role your family played in helping you with your homework for this course. Describe any family or other personal commitments that interfered with scheduling time to complete your

homework for this course. Discuss some of the challenges experienced trying to schedule homework time for this class. (Research question 3)

7. What do you believe attributed to your ability to complete this course? Do you feel more successful taking a course via distance education as compared to the traditional classroom? Why? After participating in this college preparation course, do you feel confident in your ability to take successfully take other college level courses? (Research question 1)

8. Describe your most rewarding experience in this course? What part of the course do you feel the most knowledgeable? Have you been able to apply what you've learned in this course to another course? How about for personal research? Do you believe that the Internet can be used effectively for teaching a course? Do you have any recommendations for changing this course? (Research question 1 & 4)

APPENDIX A2

QUESTIONNAIRE: STUDENT INFORMATION SHEET

1. Name (pseudonym)_____
2. Age_____
3. Grade_____
4. Ethnicity: African American__ Hispanic__ White__ Asian__ Other__
5. What is your overall grade point average?_____
6. What kind of school diploma are you working towards? (Check one)
__High School __College
7. What extracurricular activities do you participate in? (Clubs, band, hobbies, etc.)
8. Do you have a computer at home?_ If so, do you have access to the Internet?_
9. What is your family's annual income? 20-30,000__ 30,000-40,000__
40,000-50,000__ 50,000-60,000__ Other, please specify_____

APPENDIX B

**HIGH SCHOOL STUDENTS TEST SCORES
COLLEGE DISTANCE EDUCATION COURSE**

Student	Assign 1(50) points	Assign 2 (60)	Assign 3(100)	Assign 4 (100)	Assign 5(100)	Assign 6(100)	Assign 7 (80)	Assign 8 (50)	Final (200)
Chris	50	55	90	55	60	65	50	50	140
Marvin	50	60	90	90	80	85	90	50	175
Vivica	50	60	100	90	90	95	100	50	190
Dell	50	40	70	70	75	70	65	50	140

**HIGH SCHOOL STUDENTS
FINAL SCORE AND GRADE**

Students	Score	Final Grade
Chris	620/840 points = 74%	C
Marvin	770/840 points =92%	A
Vivica	825/840 points =98%	A
Dell	625/840 points =74%	C

APPENDIX C

DISTANCE EDUCATION CLASS SCORES AND RANKINGS

25 Students	Grades	Final Score	f (frequency)	cf (cumulative frequency)	Percentile Rank %
			1		
	D	525	1	1	2
	D	545	1	2	6
	C	575	1	3	10
	C	614	1	4	14
Chris Dell	C	620	1	5	18
	C	625	2	6	22
	B	690	1	8	28
	B	700	3	9	34
	B	715	1	12	42
	B	725	1	13	50
Marvin	A	770	1	14	54
	A	774	1	15	58
	A	790	1	16	62
	A	800	1	17	66
	A	815	3	18	70
	A	820	1	21	78
Vivica	A	825	2	22	86
	A	835	1	24	92
	A	840		25	98

APPENDIX D

CATEGORIES FROM THEORETICAL FRAMEWORK
AND RESEARCHER'S INTERPRETATION

Categories & Subcategories	Chris	Marvin	Vivica	Dell
Learner Characteristics				
Sub Categories				
Absenteeism High Low	X	X	X	X
Self-Confidence High Low	X	X	X	X
Previous Learning Experience	X	X	X	X
Independent Learner	X	X	X	
Group Learner				X
Student Leadership		X	X	
High School Learning Environment				
School Atmosphere		X		
Course Schedule	X			
Limited Access to Technology	X	X	X	X
Outside Influences				
Part-time Employment	X		X	
Single-Parenting			X	
Social Commitments		X		
Distance Education Learning Experience				

Categories & Subcategories	Chris	Marvin	Vivica	Dell
Classroom Culture				
Group Learner & Peer Support	X	X	X	X
Student Leader		X	X	
Student Interaction	X	X	X	X
Online Communication (frequent use)		X	X	
Social Status	X	X	X	X
Lack of Teacher Interaction	X	X	X	X
Teacher Expectations	X	X	X	X
Learner Support System (positive affect)				
Facilitator Support	X	X	X	X
College Support				
Computer Lab	X	X	X	X
College Electronic Classroom	X	X	X	X
Classroom Management (negative affect)	X	X	X	X
Instructor Support (positive affect)	X	X	X	X
Home Support (negative affect)	X	X	X	X
Video-Based Distance Education				
Advantages:				
Flexibility - Coordinate videos with schedule	X	X	X	X
Ability to rewind videos to reinforce learning	X	X	X	X
Ability to pace student learning	X	X	X	X
Disadvantages				
Unable to ask the instructor questions	X	X	X	X
Limits face-to-face interaction with other students enrolled in the distance education course	X	X	X	X
Inability to focus on video for length of time	X	X	X	X
Untimely Feedback	X			X
Limited by technology or location to view videos			X	
Difficult to incorporate learning strategies unlike the traditional classroom			X	
Course Materials	X	X	X	X
College Level Course Work	X	X	X	X
Student Motivation				
Extrinsic Motivation				
Freshman Experience	X	X	X	X
Grades	X	X	X	X

Categories & Subcategories	Chris	Marvin	Vivica	Dell
Intrinsic Motivation	X	X	X	X
Student Aspirations	X	X	X	X
Goals	X	X	X	X
Facilitator & Instructor Support		X	X	
Motivation				
High		X	X	
Low	X			X
Student Outcomes				
Test Scores				
High		X	X	
Low	X			X
Attendance				
High		X	X	
Low	X			X
Application (Learning Experience) positive	X	X	X	X
Participation				
High		X	X	
Low	X			X

APPENDIX E
LETTERS TO PARTICIPANTS

FACILITATOR CONSENT FORM

I, _____, agree to participate in the research project on identifying learner characteristics of low-achieving high school students in a college distance education course, which is being conducted by Joni Flowers, a doctoral student in the College of Education, Curriculum & Instruction at the University of Nevada, Las Vegas. This research will contribute to how students approach learning in distance education.

I understand that this participation is entirely voluntary and that the project will be carried out as described below:

The researcher will be observing the behavior and learner characteristics of Horizon High School students enrolled in the Community College of Southern Nevada's Research On the Internet distance education course periodically during the next few months (15 weeks). During that time, she will not interfere with any ongoing activities in the classroom.

Questions to students will seek their opinion about the distance education course, how it works, what is hard, easy, problems, etc. The researcher will review student materials such as student assignments, and exams after they have been graded. In accordance with this, the names of all the students, facilitator, and the school will be kept confidential. Pseudonyms will be used in all cases.

I am also aware that as a participant in this project I have the right to refuse to answer any questions at any time, and that all interviews and records of my actions will be kept strictly confidential through the use of pseudonyms. In addition, I may withdraw from the study at any time.

The researcher, will answer any questions about this research, now or during the course of the project. A copy of the dissertation will be provided to the school.

I have read and understand this consent form, and as noted above, am willing to participate in this research.

Facilitator Signature

Date

Researcher Signature

Date

(Please sign both copies. Keep one for your records and return the other to the researcher)

STUDENT CONSENT FORM

I, _____, have been asked to participate in the research project on learner characteristics of low-achieving high school students in a college distance education course, which is being conducted by Joni Flowers, a doctoral student in the College of Education, Curriculum & Instruction at the University of Nevada, Las Vegas. This research will contribute to how students approach learning in distance education.

I understand that this participation is entirely voluntary and that the project will be carried out as described below:

The researcher will be observing the Community College of Southern Nevada Research on the Internet distance education class periodically during the next few months. During that time, she will not interfere with any ongoing activities, and her presence will not cause discomfort for the student or facilitator. She will be observing classroom video lectures and computer lab activities and informally talking with students and/or facilitator during and after class, or at other times when scheduled or planned activities have been completed.

Questions to students and the facilitator will seek their opinion about the distance ed course, how it works, what is hard, easy, problems, etc. The researcher will review student materials such as student assignments, and exams after they have been graded. In accordance with this, the names of all the students, facilitator, and the school will be kept confidential. Pseudonyms will be used in all cases.

I am aware that as a participant in this project I have the right to refuse to answer any questions at any time, and that all interviews and records of my actions will be kept strictly confidential through the use of pseudonyms.

I will discuss participation in this project with my parent/guardian before agreeing to participate. As a participant, I must pay the \$25.00 enrollment fee for the distance education course.

The researcher will answer any questions about this research, now or during the course of the project. A copy of the dissertation will be provided to the school.

I have read and understand this consent form and I (check one of the following)

- am willing to participate in the research study.
 am not willing to participate in the research study

Student Signature

Date

Researcher Signature

Date

(Please sign both copies. Keep one for your records and return the other to the researcher)

PARENT PERMISSION FORM

Dear Parent:

I am a doctoral candidate in the College of Education, Curriculum and Instruction, at the University of Nevada, Las Vegas, and I am currently working on my dissertation. The focus of my study is on learner characteristics that contribute to the success or failure of high school students in a college distance learning course. The research will contribute to understanding how distance education programs are designed and implemented to meet the needs of students who aspire to attend college.

As the researcher, I will be observing student behaviors and learner characteristics of selected high school students who are enrolled in the Research on the Internet, college distance education course. I am also the instructor for the course and will be teaching via videotaped lectures.

During the observation, I will not interfere with any ongoing activities in the classroom. I would like to talk informally with students during breaks before and after class, or at other times when scheduled or planned activities have been completed, and interview them upon completion of the course. Questions to students would seek their opinions about the distance education course, how it works, what is hard, easy, etc.

My purpose is to see what happens in the distance education classroom. In accordance with this, the names of all the students, responses to interview questions, facilitator, and the school will be kept confidential, along with responses to interview questions. Pseudonyms will be used in all cases.

The purpose of this letter is to let you know that I will be in your student's Research on the Internet class, and to request your permission to have your student participate in this study as outlined above.

All students enrolled in the course will be responsible for paying the \$25.00 enrollment fee for the course. You should discuss participation in this project with your child before consenting to their participation.

A permission form is attached to this letter. I would appreciate your signing it and having your student return it to me in class.

If you have any questions about the research, please feel free to contact me at: (702)651-4440. I will be happy to answer any questions you may have.

Sincerely,

Joni Flowers

I have read the above information and my child (student) _____

(Check one of the following)

- may participate in the research study.
 may not participate in the research study.

Signature _____

Date _____

APPENDIX F

CLARK COUNTY SCHOOL DISTRICT: PROPOSAL

**Clark County School District
Cooperative Research Application
Student Form**

Date: July 14, 1998

Phone number: 651-4440

Requester/Researcher: Joni Flowers

Primary reason for research: The research is being conducted for my doctoral dissertation.

Purpose of the study:

This study will identify which learner characteristics of low-achieving high school students enrolled in a college level distance education course contribute to their success or failure.

Rationale for study:

The students were selected for this study, because minimal research in distance education addresses the educational needs of low-achieving high school students who aspire to earn a college degree.

Brief Description:

There will be five high school student participants (junior & seniors) for this study. Students will be selected by the Horizon High School North principal, high school computer instructor, and the researcher. The students range over mixed learning ability, ethnic diversity, and socio-economic status.

The participants in the study will also include the college instructor who will be teaching

the Research on the Internet course via videotaped instruction (telecourse). The instructor is also the researcher for this study, and will be a participant observer in the classroom and computer lab on the high school campus. The facilitator for the study is the high school computer instructor. He is required to be present in the classroom and lab to assist students during the course.

The study will also observe student behaviors such as motivation and various learner characteristics (self-esteem, absenteeism, self-confidence, self-expectations) of students enrolled in a college distance learning, Research On the Internet course, where the instructor who is also the researcher presents the lectures via a telecourse (prerecorded videos) to the students in their high school classroom. The instructor/researcher will interact with the students via E-mail, desktop videoconferencing, telephone, and on-site visits.

This project will employ a qualitative methodology using a multiple-case study design. The research methodology will consist of classroom observations, E-mail (Internet) and desktop videoconferencing conversations. Student interviews using the attached interview protocol will be conducted via E-mail at the end of the course.

In addition, student homework assignments and tests from the course will be examined by the researcher after they have been graded according to regular classroom procedure. The assignments will be collected on the specified due dates to be analyzed for student comprehension of video lectures and course materials; and completeness or incompleteness of homework. Descriptive statistics will be compiled about student homework, and test grades to see how well students achieved on their homework compared to their classmates in the study and other students enrolled in the course. This can be compared to learner characteristics to determine if there is an effect from distance learning on learner characteristics.

Number of schools involved: 1	Amount of time per school: 1 hr a week
Number of classes involved: 1	Amount of time per class: 1 hr a week
Number of students involved: 5	Amount of time per student: 2 hrs a week
Number of teachers involved: 1	Amount of time per teacher: 2 hrs a week
Number of school district district administrators involved: 0	Amount of time per school district administrators involved: 0

Specific services/resources: on-campus computer lab with Internet access

Provisions for maintaining confidentiality of student information: pseudonyms will be used

Provisions for providing CCSD access to findings and final report findings:

A copy of the dissertation will be provided to CCSD

Description of short-term and/or long-term benefits to education based on findings from this research:

The students in the study will be given the opportunity to obtain their first three college credits from the Community College of Southern Nevada. In addition, they will be exposed to a distance learning environment which may have a major influence on their desire to continue their college education.

Understanding which learner characteristics contribute to low achievers success or failure in distance learning will improve distance learning programs; will improve communication between teacher and student, increase teacher expectations of low achievers, expand student thinking and learning strategies, and increase the number of academic courses offered to low achievers.

This study has theoretical and practical applications. Findings will add to distance education learning theory by providing information on which student characteristics contribute to success or failure in a distance education college prep course. The study also has practical implications for teachers who teach in high school distance education systems. The research will help educators to understand how teacher expectations affect student performance; and what strategies can be employed to support student achievement, especially among low achieving students who exhibit learner characteristics that hinder academic performance.

In addition, the study will provide useful information for the instructional design of college preparation courses that teach advanced academic skills to low-achieving high school students. Distance education is moving from a marginal to an integral component of the academic curriculum. This study will help educators understand why some students succeed and others do not.

**FACTORS THAT CONTRIBUTE TO THE ACADEMIC ACHIEVEMENT
OF HIGH SCHOOL STUDENTS IN A
COLLEGE, DISTANCE EDUCATION COURSE**

Prospectus

Presented by

**Joni Flowers
College of Education, C&I
University of Nevada, Las Vegas
December 15, 1998**

WRITING STYLE: APA

SIGNIFICANCE OF STUDY:

The students in the study will be given the opportunity to obtain their first three college credits from the Community College of Southern Nevada. In addition, they will be exposed to a distance learning environment which may have a major influence on their desire to continue their college education.

Understanding which learner characteristics contribute to low achievers success or failure in distance learning would improve distance learning programs; would improve communication between teacher and student; would increase teacher expectations of low achievers; would expand student thinking and learning strategies; and would increase the number of academic courses offered to low achievers.

This study has theoretical and practical applications. Findings will add to distance education learning theory by providing information on which student characteristics contribute to success or failure in a distance education college prep course. The study also has practical implications for other components in high school distance education systems. The research should help educators to understand how teacher expectations affect student performance; and what strategies can be employed to support student achievement, especially among low achieving students who exhibit learner characteristics that hinder academic performance.

In addition, the study will provide useful information for the instructional design of college preparation courses that teach advanced academic skills to low-achieving high school students.

RESEARCH QUESTIONS:

1. Will particular aspects of the college distance education course support equity of access to technology?
2. What factors influence the achievement of low-achieving students in the distance education course?
3. What aspect of the distance education support system affects learner characteristics?
4. Can distance education be an effective delivery tool to transition low-achieving students into a college academic environment?

PARTICIPANTS: High School Students

There will be five high school student participants (junior & seniors) for this study. Students will be selected by the Horizon High School North principal, high school computer instructor, and the researcher. They range over mixed learning ability, ethnic diversity, and socio-economic status.

The students were selected for this study, because minimal research in distance education addresses the educational needs of low-achieving high school students who aspire to earn college degree.

The participants in the study will also include the college instructor who will be presenting the Research on the Internet course via lecture on videotape. The instructor is also the researcher for this study, and will be a participant observer in the classroom and computer lab on the high school campus. The facilitator is the high school computer instructor. He is required to be present in the classroom and lab to assist students during the course.

The students will view the prerecorded lectures in a classroom located on the high school campus. The classroom is equipped with a television and VCR. The students will view a total of two lectures (30 min. each) once a week, for twelve weeks. The remaining 3 weeks will be used to review course material and prepare for the final exam.

PURPOSE, METHODS, PROCEDURES:

This study will identify which learner characteristics of low-achieving high school students enrolled in a college level distance education course contribute to their success or failure. The researcher will also consider students learning in a college distance learning, Research On the Internet course, where the instructor who is also the researcher presents the lectures via a telecourse (prerecorded videos) to the students in their high school classroom. The instructor/researcher will interact with the students via E-mail, desktop videoconferencing, telephone, and on-site visits.

This is a non-experimental research study that will identify the learner characteristics of low-achieving high school students enrolled in a college distance education course. This project will employ a qualitative methodology using a multiple-case study design. The research methodology will consist of classroom observations, E-mail (Internet) and desktop videoconferencing conversations. Unstructured informal student interviews will be conducted via E-mail at the end of the course.

In addition, student homework assignments and tests from the course will be examined by the researcher after they have been graded according to regular classroom procedure.

The assignments will be collected on the specified due dates to be analyzed for student comprehension of video lectures and course materials; and completeness or incompleteness of homework. Descriptive statistics will be compiled about student homework, and test grades to see how well students achieved on their homework compared to their classmates in the study and other students enrolled in the course.

APPENDIX G

DEFINITIONS

Advanced Academic Skills. Skills that are associated with the learning of advanced content matter.

At-Risk Student. Defined in terms of their personal and family characteristics, such as low socio-economic status, low educational attainment by one or both parents, and from ethnic and linguistic minority backgrounds (Donmoyer & Kos, 1993; Lehr, 1988; Natriello, McDill, & Pallas, 1990).

Basic Skills. Remedial skills that are associated with the content areas of reading, writing, and math.

Distance Education. Research defines distance education or distance learning as any type of learning in which the instructor and student are physically separated by space and time (Dille, 1992; Willis, 1994).

Distance Education Student. Defined as a student who receives instruction from a remote or distant location. Elements such as age, maturity, motivation, self-discipline, high academic achievement are characteristics of the distance education student (Dille & Mezack, 1992; Willis, 1994).

High Risk Student. Defined as students who lack requisite skills as determined by standard measures such as admissions tests and/or high school GPA (Higbee, 1985).

Low-Achieving Students. Defined as students with limited academic achievement and are characterized as having low school grades, low SAT scores, and high absenteeism (Donmoyer & Kos, 1993; Wells, 1990).

Motivation. The ability to help students want to learn. It is the driving force which assumes the opportunity, ability, and skill will result in better performance and deeper understanding (Frymier, 1995).

Video-Based Distance Education. One-way video or prerecorded videos allow students to see and hear the instructor, but the instructor cannot see or hear the students (Bond, 1987; Bradshaw & Brown, 1989; U.S. Congress, 1989).

VITA

Graduate College
University of Nevada, Las Vegas

Joni Flowers

Home Address:

1820 Quartet Drive
North Las Vegas, Nevada 89032

Degrees:

Associate of Applied Science, Business Management, 1988
Community College of Southern Nevada

Bachelor of Science, Education, 1990
University of Nevada, Las Vegas

Masters of Information and Library Studies, 1992
University of Michigan, Ann Arbor

Special Honors and Awards

Role Model Award
Black Professional Women's Alliance

Outstanding Community Service Award
Community College of Southern Nevada

Publications

Flowers, J. (1996). From paraprofessional to professional: The changing role of an African-American librarian in In Our Own Voices: The Changing Face of Librarianship. (EDS.) Teresa Y. Neely, and Khafre Abif. Maryland: Scarecrow Press.

Flowers, J. (1996). Using computer alternate keyboards for learners with physical disabilities. (Monograph No. 1). (EDS.) Bea Babbitt, and Kyle Higgins. Las Vegas, Nevada: University of Nevada, Las Vegas, College of Education.

Dissertation Title: Factors that Contribute to the Progress of High School Students in a College Distance Education Course

Dissertation Committee:

Co-Chair, Dr. Neal Strudler, Ph. D.

Co-Chair, Dr. David Heflich, Ph. D.

Committee Member, Dr. LeAnn Putney, Ph. D.

Committee Member, Dr. Porter Troutman, Ed. D.