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ABSTRACT

A project was undertaken to increase retention in a health education telecourse by incorporating a competency-based orientation to distance learning and learner-centered instructional strategies into the telecourse, and by using multiple media for content delivery and interaction. A general orientation to distance learning was developed that addressed seven competencies: transition to technology-mediated instruction; use of technology tools; effective communication; problem solving; collaboration; research techniques; and reflection. The telecourse was delivered via four media (cable television, print, on-campus meetings, and a course World Wide Web page), and all assignments were designed to reinforce development of the seven competencies. Student retention data and responses to participant surveys established that the new retention strategies achieved the following results: (1) withdrawal of more students earlier in the semester (following the general orientation to distance learning) and a higher retention rate for telecourse students using the Internet for course support; (2) increased student satisfaction with instructor preparedness, quality of interaction, instructor feedback, and self-responsibility for learner-centered instruction; and (3) higher collective grade-point average for the course (from 2.45 to 3.19). Appended are the following five items: original and revised telecourse readiness questionnaires; telecourse evaluation; rubric of competency standards; orientation objectives; and memorandum containing frequently asked questions. (Contains 97 references.) (MN)

Increasing Retention of Adult Learners in Telecourses Through the Incorporation of Learning-Centered Instructional Strategies and the Use of Multiple Modalities for Content Delivery and Interaction

by
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A Practicum Report Presented to
the Ed.D. Program in Instructional Technology and Distance Education
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ABSTRACT

Increasing Retention of Adult Learners in Telecourses Through the Incorporation of Learning-Centered Instructional Strategies and the Use of Multiple Modalities for Content Delivery and Interaction. Nelson, Lin M., 1999: Practicum Report, Nova Southeastern University, Ed.D. Program in Instructional Technology and Distance Education. Retention/Telecourses/Alternative Assessment/Learning-Centered Instruction/Interaction/Computer-Enhanced Instruction/Distance Learning/Learning Styles/Adult Learners

The purpose of this practicum was to increase retention in a health education telecourse, HLTED 01, by: (a) designing and implementing a competency-based orientation to distance learning, (b) incorporating learning-centered instructional strategies into the HLTED 01 curriculum, and (c) utilizing a mix of media for content delivery and interaction. At the writer's institution, instructional technology was being used to automate that which traditionally occurs in the classroom. Retention data and results of student surveys suggested that telecourse students expected the traditional instructor-centered learning experience even though the telecourse environment and distance education are independent of time and place and require learner autonomy.

The writer developed a general orientation to distance learning that addressed seven competencies: (a) transition to technology-mediated instruction, (b) use of technology tools, (c) effective communication, (d) problem-solving, (e) collaboration, (f) research techniques, and (g) reflection. All assignments in HLTED 01 were designed to reinforce the development of these basic competencies. Course content was delivered via four media: cable television, print, on-campus meetings, and a HLTED web page.

An analysis of data revealed the following trends: (a) a twofold shift in retention patterns with students withdrawing earlier in the semester, following the general orientation to distance learning, and a higher retention percentage for telecourse students using the Internet for course support; (b) an increase in student satisfaction with four dimensions of the distance learning experience (instructor preparedness, quality of interaction, instructor feedback, and self-responsibility for learner-centered instruction); and (c) an increase in collective GPA in HLTED 01 from 2.45 to 3.19 following the inclusion of learning-centered strategies and alternative assessment into the instructional design of the course.

Chapter I: Introduction

Description of Community

This practicum was implemented in a large, culturally diverse, urban community college in the western United States. The college is the largest of four comprehensive, public community colleges within a 12-mile radius, serving six cities. Each college functions autonomously.

During the spring semester 1997, the institution served 10,873 students. Minorities comprised 80% of the student population (Asians, 30%; African Americans, 34%; Latinos, 11%; Native Americans, 1%), the average age was 30 years and 57% of the students were female. While gender distribution was representative of the geographic area serviced by the institution, ethnic distribution was not. Both white and Hispanic student populations were much lower than the corresponding service populations.

Writer's Work Setting

Both the institution and the distance learning program have distinct mission statements. The institutional mission statement, as it appears in the college catalog, is simple and straight forward. The college is " . . . committed to organizing its resources--human, financial, and technological--to provide appropriate educational programs and services to all adults of its diverse communities as they face the social, economic, and personal challenges of a changing society" (college catalog, p. 2). This commitment to responsively serve the educational needs of a diverse population, however, entails the continual development, implementation, review, and improvement of programs addressing such issues as educational access, matriculation, and transition to employment. With shrinking financial resources and rapidly increasing educational demands, the institution finds itself more often in a reactive position rather than proactively planning for the demographics of change.

The distance learning program has three philosophical goals, but is driven by one very pragmatic goal. Philosophically, distance learning courses are to: (a) supplement

traditional on-campus course offerings by increasing educational access through the utilization of telecommunication technologies; (b) provide educational opportunities for adult learners who are unable to attend traditional on-campus classes because of geographical distance, scheduling conflicts, family and/or career constraints, or physical disability; and (c) add flexibility to the scheduling of on-campus classes. In reality, distance learning courses will exist only as long as they generate high Full Time Equivalent Students (FTES)--a measurement of enrollment and the standard for funding public higher education.

The uniqueness of the work setting lies in (a) the diversity, both political and cultural, among students, faculty, administration, and district personnel, and (b) the operation of one 24-hour educational access television station.

Diversity is, indeed, the foremost asset. The mix of cultures, ideas, experiences, knowledge, and values affords the institution the opportunity to truly practice the principles of a democratic society. On the other hand, focus on a shared vision can be dissipated by diversity (Senge, 1990). The more heterogeneous the group, the more time and effort it takes to bring members together--to build trust and credibility and to implement systemic change.

Historically, the district administrative staff has separated itself from the colleges and has functioned primarily as the traditional controlling organization. The district-wide structure can be characterized as isolated and fragmented. This perception has contributed to a ubiquitous sentiment of skepticism toward district personnel and members of the Board of Trustees. Although each of the four colleges functions autonomously, monies generated by college enrollments goes into a district fund. Even in times of fiscal crises, the colleges insist on competing with one another. As a result, services are often duplicated and resources are inequitably distributed.

Technology is affording the District the opportunity to secure additional state funding but the writer has observed concern among both faculty and students that these

funds may not be used to support systematic technology infusion into the curriculum. In September 1997, the Board of Trustees adopted a strategic technology plan. The plan addressed only the development and support of the infrastructure network that supports each college's choice to offer web-enhanced telecourses and web-based instruction as alternative modalities for teaching and learning. At the college level, however, there is no strategic plan for technology infusion. The college lacks a consistent, continuous process to prioritize and allocate resources in a timely manner to keep pace with student/faculty needs to effectively utilize alternative methods of content delivery and interaction.

In the 1980s, the district was allocated three educational cable access channels. Cable television is the resource that differentiates this district from other community colleges. Prudent utilization of the 24-hour educational access cable television channel potentially allows the district to reach 150,000 homes within five adjacent cities.

A general policy statement provides guidance for the utilization of these educational access television channels. Cablecasting telecourses is the first priority of the station. The second priority is to cablecast instructional programs for use by students in the classroom, in the home, or at the work site. Faculty are encouraged to video tape on-campus sessions to supplement the actual telecourse.

The demographics of distance learning students at the writer's institution reflect characteristics common to distance learners in general (Levine, 1988). A majority of distance learners are female adults who are married with children. Distance learners are generally employed full-time, choose to take telecourses primarily because of convenience, and enroll in courses that fulfill their immediate needs and meet degree requirements.

There are four additional characteristics that are specific to the writer's institution: (a) telecourse students are primarily African American women, working mothers, completing a certificate or degree, and planning to transfer to a four-year institution; (b) distance students select telecourses without seeking academic advising; (c) distance students hear about the distance learning program from other students, read about it in the

college class schedule, or discover it by the activity of television "channel surfing," and (d) although highly motivated, less than 45% complete the telecourse(s).

The opportunity to teach a distance learning course is offered first to full-time faculty. This is significant because the full-time faculty tend to be traditionalists and slow to adopt to pedagogical change. Presently, the number of full-time and part-time faculty teaching distance learning classes is approximately equal.

Writer's Role

In September 1994, the writer was appointed Coordinator of Distance Learning by the college Dean of Instruction. This appointment was a reaction to an informal mandate from the state's Community Colleges Chancellor's Office. The state Community Colleges Commission of Innovation had introduced a concept that by the year 2005, 20% of all community college courses would be offered at a distance. In 1995, this concept became a goal for the system and was incorporated into the Strategic Telecommunications Program (C. Mora-Lopez, personal communication, 4/27/98).

Because of its experimental status, distance learning is not recognized within the present organizational structure. There is no designated budget and operational support is volunteered by existing staff members. The Coordinator of Distance Learning reports to the Dean of Instruction, providing recommendations pertaining to curriculum, faculty assignments, and essential resources. The decision to provide support resources, however, ultimately rests with the college president. There is no formal job description; the writer is simply challenged to envision why and how the institution will deliver distance education now and in the future, beginning with telecourses.

Telecourses represent just one type of distance learning (Ball, 1987). A telecourse is a pre-produced integrated learning system consisting of a series of video programs, a textbook, study guide, faculty manual, localized course syllabus, and, in some instances, multimedia supplements (Ball, 1987; Levine, 1988). An educational institution will license

the telecourse for a specified period of time, provide faculty and support services, and issue academic credit for the course. Telecourse students work independently but receive guidance from the college instructor who is available in-person during prearranged on-campus meetings or by telephone during scheduled office hours. Interaction is commonly through mail and voicemail although instructors are encouraged to use e-mail to communicate with those students that have a personal e-mail address.

Telecourses are comparable to traditional on-campus classes, the difference being the medium of content delivery. Although instructors schedule a minimum of fifteen hours of face-to-face contact with students, most interaction is asynchronous in nature. Broadcast, cable television, and video cassette are the media commonly used for content delivery.

Telecourses provide an ideal transition from the traditional on-campus lecture format to the first two phases of technology diffusion--the substitution phase and the transition phase (Itzkan, 1995). The preproduced video tapes replicate the on-campus lecture, but this system of information delivery also requires faculty to incorporate new methodologies within a very realistic time frame. Since telecourse faculty are no longer the transmitters of information, their role can gradually shift to that of mentor or advisor (Hopey & Ginsburg, 1996). Once an instructor gains firsthand experience with distance teaching, he/she will discover that traditional instructional methods may not be effective in a non-traditional setting with non-tradition learners. Problems will arise, but the innovative instructor will be challenged to find ingenious solutions, including the utilization of a variety of technologies. At the same time, students can make the transition in small steps. The technology needed for telecourses is already in place--a television, a VCR, and a telephone. Students do not need to learn to use technology but can begin practicing the communication and retrieval skills that will be needed for computer-based instruction. For those students who have access to a computer and modem, Internet searches and e-mail support telecourse instruction. Finally, since this transition requires minimal faculty

training, and classroom contact hours are reduced, management can buy time to develop strategies to meet the training and incentive demands of distance learning faculty.

Certainly, the immediate task of developing a series of telecourses could have been accomplished through managerial strategies but, by assigning this responsibility to a faculty member, management made a strategic decision to infuse leadership within a subordinate level of hierarchical structure to facilitate the process of change (Fullan & Miles, 1992; Senge, 1996).

Within the organizational structure, the writer reports directly to the college Dean of Instruction. Primary responsibilities include telecourse articulation, curriculum development, telecourse scheduling, recruitment and training of faculty, and student orientation to the distance learning environment. To fulfill these responsibilities, the writer consults on a regular basis with District personnel (the Director of Technology and the Vice Chancellor of Educational Services), serves on two influential committees (the college Curriculum Committee and the District Learning Community), and is a member of the Executive Council of the Consortium for Distance Learning.

Initially, the concept of distance learning was communicated informally through social networks within the college. As a faculty member, the writer approached colleagues considered to be educational innovators, that is, the risk-takers, to invite them to voluntarily participate in a "trial" project. Emphasis was placed on the benefits to the instructor such as the opportunity to work with adult learners, the challenge of ingeniously developing effective methods of interaction, and most important, the option of flexible scheduling. Within a short period of time, five or six early adopters committed to the shared vision of providing education that is convenient, flexible, relevant, authentic, and academically rigorous. They were encouraged to use this vision as a foundation for their own innovations and to collectively improve the vision.

As other faculty members observed this "trial," they began to request more information about telecourses and how these preproduced programs could be implemented

within individual departments. Most instructors are enthusiastic about distance learning; a few resist any deviation from the traditional lecture mode of delivery.

Presently, the institution offers an average of 20 telecourses per semester with a total initial enrollment of just under 1000 students. The writer must develop the knowledge and leadership skills to effectively address the many concerns of management, faculty, and students regarding the infusion of technology into the educational environment. The conflicting goals of generating high FTES while maintaining academic integrity make this a difficult task. It is the writer's responsibility to: (a) determine the maximum number of students that can reasonably be accommodated in a distance class without sacrificing academic integrity; (b) develop a consistent, progressive curriculum so that distance learners can take related courses that fulfill requirements for an Associate degree; (c) ensure that all preproduced telecourse materials are adapted to meet the course content and performance objectives of the comparable traditional course and are approved by the college's Curriculum Committee; (d) provide training for both telecourse faculty and students for the transition from traditional to technology-mediated instruction; and, (e) determine the best combinations of content delivery--print, video, web-- based upon student demographics and learning needs.

Chapter II: Study of the Problem

Problem Statement

The problem to be solved in this practicum was low retention in telecourses. Course completion in traditional courses is 69%; in telecourses it is less than 45%. Within these percentage rates, there is a difference of 14 percentage points between the highest and lowest completion rates of different ethnic groups. In traditional classes, the rate of completion for Asian/Pacific Islander students is 76% compared to a completion rate of 62% for African American students. The completion rate for Latinos is 69%; for Native Americans it is 72%; for whites it is 73%. In telecourses, the same ethnic trends are reflected. Course completion, or retention, in telecourses should be equal to that in traditional on-campus classes.

Problem Description

Retention is not a problem that has received serious consideration at the writer's institution. However, changing student demographics, new demands for workforce preparation, and the infusion of educational technology, coupled with shrinking resources, has forced planners at the writer's institution to reexamine who, what, and how we are teaching.

Over the past two decades, student access to the community college system has declined. The participation rate, defined as the number of students per 1000 adults, has declined from 88/1000 in 1975 to 60/1000 in 1995. By the year 2005, it is projected that the level of access must increase to 78/1000 if the community college system is to effectively meet the training demands of a skilled and educated global workforce. It is estimated that by the year 2005, an additional 450,000 students will be seeking a community college education (Nussbaum, 1998).

The state community college Board of Governors is in the process of developing a 2005 policy statement that will offer a strategic plan for dealing with future educational

challenges. The plan calls for shared responsibility among the State, the community colleges, parents, and students to increase access to postsecondary education.

Among the thirteen improvements or reforms that the community colleges must implement are the following: (a) to change the internal structure of the academic calendar and to utilize technology to maximize existing physical plant capacity; (b) to maximize learning, retention, and matriculation by utilizing "scarce" learning resources and by expanding methods of instruction to match appropriate teaching styles with the diverse learning styles; (c) to make greater use of educational centers versus building new campuses; and (d) to produce improved outcomes, including increased course completion (Nussbaum, 1998).

It is the writer's opinion that since the community college system has made the commitment to the State to produce improved outcomes, it is likely that the criterion for funding individual colleges will be modified to reflect course completion rather than initial course enrollment. It is also the writer's opinion that as technology is used to deliver instruction, the traditional barriers of time and place will be eliminated. There will be competition among educational institutions to produce improved outcomes as a means of vying for student enrollment. These two events will significantly impact future institutional revenue.

Problem Documentation

The intent of tracking enrollment in telecourses was to assist in the development of various aspects of the distance learning program. Specifically, this information would be used to determine marketing strategies, course scheduling, and to define that point in time when a telecourse would be cancelled because it did not "make" minimum enrollment. The problem of low retention was discovered incidentally. After two or three semesters, it became apparent that there was a great deal of interest in telecourses reflected by high initial enrollment. Then, however, there was a significant drop during the first two weeks.

Enrollment dropped approximately 10% per month until mid-semester. From mid-semester to course completion, enrollment dropped another 40%. This trend reoccurred in subsequent semesters and led to the formulation of an essential question: Why do students participate in the enrollment process, purchase books, attend the telecourse orientation, complete assignments, complete a midterm examination, and then withdraw?

Causative Analysis

An investigation revealed several possible causes of the problem of low retention. These causes can be grouped into four areas: procedures, people, materials and equipment, and attitude. Each cause will be discussed, in detail, separately.

Possible procedural causes include the inaccessibility to distance learners of student support services such as counseling, the library, bookstore, tutoring center, media center, and even Admissions and Records. Limited course offerings is another possible procedural cause of the problem.

There is a lack of academic counseling for telecourse students. Distance learners tend not to come onto campus and, therefore, do not have access to counseling services. During the mandatory telecourse orientation, students are asked to share their expectations of this non-traditional experience. Several students stated that they believe watching a television course will be easier than a traditional course. During telephone interviews, some students disclosed that they were taking in excess of 20 units and working full-time. Other students have discovered that their home environment is not conducive to self-study, nor do they enjoy the feeling of isolation.

The writer then interviewed college counselors to determine what educational issues were discussed specifically with first-time telecourse students. It was found that counselors had not been adequately briefed by the Coordinator of Distance Learning. Counselors did not clearly understand the differences between telecourses and traditional on-campus classes, nor were they aware of the requisite skills to be mastered to become a successful distance learner.

The distance learning curriculum, that is, the course offerings, is a possible procedural cause. Wheeler and Bachelder (1996) suggested that students are more likely to persist in a distance course if it is part of a curriculum where transfer courses are offered in a consistent pattern. Distance students were surveyed to determine their reasons for selecting a specific telecourse and to suggest future course offerings. Results of the survey indicated that students enrolled in telecourses to fulfill requirements for an Associate degree and to complete courses that would transfer to the state university system.

People-related causes include the lack of preparation of students, faculty, and management for new demands of a distance learning environment.

Distance learning may not be appropriate for all learning styles. The writer teaches a health education telecourse. Through personal observation, it was apparent that some students were in need of face-to-face interaction with an authority figure. If this interaction was not available, they became discouraged and withdrew from the course. The *Canfield Learning Styles Inventory* was administered to all health education distance learners. It became possible to identify students who needed help setting goals, were instructor-dependent, resistant to groupwork, and/or least preferred text as a medium of content delivery.

Resistance of faculty to move from traditional to learner-centered instruction possibly contributes to student attrition. Several faculty members have expressed the concern that students cannot learn effectively outside of the traditional lecture format. The writer began to review the literature pertaining to adult learning or andragogy. From the writer's inquiry, there is a need for both student and instructor to understand the appropriateness of both traditional and learner-centered instruction and to utilize a variety of activities to maximize the educational experience (Knowles, 1986).

Another cause might be the students' inexperience with learner-centered instruction, including a lack of preparation for self-responsibility in determining personal instructional goals and/or a lack of preparation for collaborative work. This possible cause was

uncovered through personal observation of student performance in the health education telecourse taught by the writer. Students resisted forming learning teams and were uncomfortable with the ambiguity that necessarily accompanies self-directed learning. To further investigate the cause, the writer included a module on the development of skills necessary to succeed in distance learning courses. This unit was presented as part of the health education course content and an abbreviated version was presented to all distance learning students during their initial telecourse orientation. It appeared that, after this brief intervention, students responded more positively to the concept of learning teams and groupwork. Also, the writer observed an increased willingness on the part of distance students to propose alternative methods of evaluation of personal learning and to experiment with electronic communication and other technologies.

Possible causes related to materials and equipment include difficulties with the technologies used within the telecourse learning environment as well as failure to utilize these technologies to the fullest potential for information transfer, interaction, and feedback.

Students voiced frustration when they could not view video programs at scheduled times. These frustrations seemed to result from technological difficulties such as inability to program a VCR, unavailability of the educational access channel in areas outside of the district's five adjacent cities, and/or technical problems at the headend. The term "headend" refers to the room where equipment to receive and transmit television signals is housed. Input from telecourse students via direct discussion and written evaluations revealed that such technological difficulties could be a viable reason to withdraw from a telecourse. The writer then began to review the literature pertaining to distance learning and student satisfaction. The literature suggests that although technology difficulties persist, most distance learners, at least in synchronous distance learning environments, are willing to cope with the problems (Franks, 1996; Thomerson & Smith, 1996; Wheeler & Bachelder, 1996).

A review of the literature pertaining to distance learning and student satisfaction suggests that lack of interaction is a major reason for student dissatisfaction in distance learning courses (Hackman & Walker, 1990; Hillman, Willis, & Gunawardena, 1994). An analysis of student evaluations of individual telecourses indicated that there was little interaction among students and between students and instructor. The writer believes that the lack of such interactions is a contributor to the problem of low retention in telecourses.

The time delay in feedback is another possible cause for the problem. Oftentimes, there may be a 48-hour delay from when a student asks a question to when he/she receives an answer. This cause was uncovered both through direct discussion with students and the use of student evaluation surveys. The writer then began to review the literature pertaining to distance learning and student satisfaction. The literature suggests that the delay in feedback is a major reason for student dissatisfaction in distance learning courses education (Tallman, 1994).

Attitudinal causes reflect the unwillingness of people to participate in shared responsibility. For distance learning to work there must be cooperation among, and commitment from, students, faculty, and management. Students expecting simply to reproduce the information delivered to them by an instructor; faculty unwilling to experiment with new pedagogies; managers oblivious to the fact that a new program demands additional resources; all are possible causes of the problem. Through casual conversations, personal interviews, group discussions, and reflection papers, the writer is convinced that the process of innovation diffusion (Itzkan, 1995) is occurring. Adequate time must be allowed for all levels of the institutional hierarchy to prepare for the change (Rutherford & Grana, 1995).

Relationship of the Problem to the Literature

As we move toward the 21st century, a change in student demographics accompanied by decreased funding for public education, is challenging higher education, especially community colleges, to utilize cost-effective strategies to increase educational

access and provide educational opportunities, and to meet the diverse needs of adult learners. In an eagerness to meet this challenge, telecommunication technology is being utilized as the medium for instructional delivery before its potential effectiveness as an educational tool is fully understood (Stubbs & Burnham, 1990). Johnson (1997) maintained that there is a need for leadership in the age of technology to ensure adaptation to technology without losing sight of the ultimate goal of quality learning.

Research studies have reported no significant difference between traditional, face-to-face courses and those courses mediated by technology (Russell, 1992; Whittington, 1987). These studies, however, have generally focused on performance that is operationally defined as course grades. Hawkes, (1996a; 1996b) suggested that in order to determine how distance learning programs can be improved, it is necessary to extend program evaluation to four domains: technical, instructional, organizational, and ethical.

Kirkpatrick (as cited in Biner, 1993) contended that any measure of student outcomes should be preceded by an assessment of student reactions to the program. This leads to subsequent studies that recognized the importance of learner satisfaction when evaluating the effectiveness of a distance learning course. Biner, Dean, and Mellinger (1994) argued that student satisfaction could result in (a) lower student attrition rates, (b) higher levels of student motivation, (c) greater commitment to the tele-education program, and (d) better learning. "Although positive distance learner reactions to a telecourse do not ensure student learning, negative reactions can be expected to have a detrimental effect on learning" (p.61).

Tallman (1994) examined the relationship of student perception of instructional services and student-support services to satisfaction and probability of completion of correspondence courses. Influential factors associated with student satisfaction included (a) "user-friendliness" of admission materials and procedures; (b) continued communication with support staff; (c) timely instructor feedback, especially at the beginning of the course; (d) accessibility and relevance of student support services, and

(e) clarity and timely delivery of written materials. No one variable was significantly related to probability of completion. Both Tinto and Cooper (as cited in Tallman, 1994) explained this phenomenon in terms of "contingent relationship." That is, if students are satisfied, they will continue; if students persist, it can be assumed that they are satisfied (Biner, 1993).

In contrast, Bink, Biner, Huffman, Geer, and Dean (1995) found achievement in telecourses to be significantly correlated with students' perceptions about the promptness of feedback. Prior GPA and year in college were also found to be predictors of achievement in college level telecourses.

Alaskan distance students expressed the need for a logically presented course with clearly stated expectations. Franks (1996) concluded that the need for clear expectations did not conflict with the need for learner independence in a distance environment; rather ". . . the student who wants expectations clearly explained also wants to be on his or her own when it comes to the details of how to meet those expectations" (p. 66).

Wheeler and Bachelder (1996) examined current instructional practices in televised instruction at Northern Arizona University to increase understanding of pedagogical implications of distance learning. Students, faculty, and technical personnel were interviewed regarding their perceptions of the strengths and weaknesses of instructional television as well as possibilities for program improvement. Students saw convenience as the greatest advantage to ITV; weaknesses included delayed delivery of course materials and feedback from instructors, lack of interaction, technical problems, and limited course offerings at a distance. Technicians identified the lack of teamwork in planning the delivery of the course to be the major weakness (Willis, 1992). Faculty listed large class size, adapting to the technology, lack of "community" and restricted interaction, and pedagogical changes as weaknesses.

Although geographic separation creates a potential for social and psychological isolation because of limited interaction (Wolcott, 1996), Pugliese (1994) found no

significant relationship between four psychological constructs--loneliness, communication apprehension, communication competence, and locus of control--and withdrawal/ persistence within a telecourse setting. This is contrary to what is expected in a traditional classroom. It is suggested that the telecourse environment acts as a social equalizer; that is, "However important the factors of social integration may be in traditional education, they cannot be said to account for the withdrawal and withdrawal/failure problem of telecourses" (Pugliese, 1994, p. 34).

Several investigations found a positive correlation between quality of interaction and effectiveness of tele-education (Hackman & Walker, 1990; Hillman, Willis, & Gunawardena, 1994). Perception of interaction was discussed by Fulford and Zhang (1993) suggesting that personal participation may not be as critical as the students perception of the overall dynamics of class interaction. This concept was explained in terms of cognitive speed theory. Students are capable of processing speech at twice the rate at which an instructor speaks. In one-way communication, the traditional lecture, the pace is slow, the student is inactive, and only needs one-half capacity to listen. Cognitive activity is eventually dominated by the other one-half capacity that is left for internal conversation and random thought patterns.

Fjortoft (1996) found age, intrinsic benefit (Franks, 1996), and learning style to be significant predictors of persistence in distance learning programs. When Foell and Fritz (1995) explored the relationship of cognitive style and satisfaction with distance learning, they concluded that although cognitive learning styles can affect student satisfaction with distance learning modalities, it becomes less significant when the instructor proactively utilizes effective instructional strategies to mediate difficult learning tasks.

Regarding technological issues, in synchronous distance learning environments, students at the host site view technology as a barrier to learning while students at the remote site are more accepting of the limitations of technology-mediated instruction (Franks, 1996; Thomerson & Smith, 1996; Wheeler & Bachelder, 1996).

Martin and Rainey (1993) investigated the effects of a satellite-delivered high school honors science course on student achievement and attitude. The course used a constructivist, problem-solving approach to learning. While the study showed no significant difference in attitude toward the content, distance students scored significantly higher than the traditional students on the achievement test.

Finally, the physical, psychological, and pedagogical adaptations required for the effective utilization of learning technologies may be difficult for faculty (Wheeler & Bachelder, 1996). McIssac and Gunawardena (1996) discussed the need to train faculty to use technology to support new teaching/learning paradigms that increase interaction and reinforce the process of independent learning.

In summary, there are five fields of variables that may affect student retention and achievement in telecourses: (a) student demographics, including learning styles, (b) faculty preparedness, (c) selected technology, (d) instructional design, and (e) support services. Students' age, previous college experience, technology training, and learning style has been found to correlate with achievement in distance learning courses. Faculty training must include both the use of technology and the integration of technology into the curriculum, specifically to support instructional objectives and to facilitate timely interaction. Technology selection should be determined by the instructional objectives and should be user-friendly to both instructor and students. Instructional design should incorporate learner-centered strategies that provide opportunity for quality interaction and collaboration. Student support services, developed to meet the needs of traditional students, must be modified to serve distance learners.

Chapter III: Anticipated Outcomes and Evaluation Instruments

Goals and Expectations

The purpose of this practicum was to increase retention in HLTED 01, a health education telecourse. A long-term goal was to improve retention in the distance learning program.

Expected Outcomes

The following outcomes were projected for this practicum:

Outcome 1. When compared to data collected during the 1997-1998 academic year, student retention in the telecourse HLTED 01 will increase at least 60%. Retention is defined as the number of students completing the course when compared to the number enrolled at Census #1 (enrollment at the fourth week of the semester). Course enrollment will be tracked at six specific times during the semester: at the start of the traditional college semester, on the last "published" day to add a class, at C1, midterm, post-midterm, and course completion.

Outcome 2. Student satisfaction with four dimensions of the distance learning experience will increase. A telecourse student evaluation survey will be administered prior to the final exam to determine degree of student satisfaction relating to: (a) instructor preparation, (b) quality of interaction, (c) instructor feedback, and (d) self-responsibility for learner-centered instruction. A five-point Likert scale will be used to quantify degree of student satisfaction and will accommodate data comparisons.

Outcome 3. Student achievement as defined by GPA will increase. An average GPA will be determined for all students completing the telecourse HLTED 01. As specific interventions are employed, it is expected that the collective GPA in HLTED 01 will exhibit improvement.

Measurement of Outcomes

The practicum was implemented over two semesters; the instructional interventions were administered to one group of students during the fall semester and then the procedure

was repeated with a different group of students in the spring. Since the populations were not the same, the repeat evaluation was used to identify trends of change. That is, as interventions were manipulated, did retention, satisfaction, and learning improve, stay the same, or decrease?

Sample population. The initial sample consisted of distance learning students enrolled in the health education telecourse, HLTED 01 during the 1997-1998 academic year. Since this is a required course for students pursuing an Associate degree, the sample tended to reflect the demographic composition of all telecourse students. In addition to using a goal-attainment model of evaluation, descriptive data was gathered for future relationship research. Utilizing a static-group comparison design, comparisons were made between an *ex post facto* "control" group and subsequent groups receiving a specific "treatment" or instructional intervention. Since the sample population did not remain constant, repetition of the evaluation constituted a trend study (Gall, Borg, & Gall, 1996).

Definitions. In this practicum, the operational definitions of retention, persistence, and success developed by the State Chancellor's Office were used to facilitate data comparisons (Research and Planning Group, 1996). Retention is defined as a student being retained in the course to the end of the term and receiving a grade notation of A, B, C, D, F, or I. Persistence is defined as a student persisting from one term to the next. Success is defined as a student receiving a grade notation of A, B, or C in a given course.

Measurement tools. A Telecourse Readiness Questionnaire (see Appendix A) consisting of ten multiple-choice questions was administered to all telecourse students during the first 15 minutes of a mandatory telecourse orientation session. The questions were designed to assess personal readiness for a distance learning environment (Loser, Trabandit, Hatheway, & Donnell, 1994). Subsequently, 10 additional multiple-choice questions were added to this survey to solicit information pertaining to learning style and learner independence (see Appendix B).

The *Canfield Learning Styles Inventory* was administered to all students enrolled in HLTED 01. Students were instructed on how to score and interpret the inventory. As an initial assignment for the course, each student was asked to determine personal relevance of the inventory by citing three implications for his/her participation in the distance learning environment.

A questionnaire was used to measure student satisfaction. A student Telecourse Evaluation (see Appendix C) was administered to HLTED 01 students prior to the final exam to determine degree of student satisfaction relating to: (a) instructor preparation, (b) quality of interaction, (c) instructor feedback, and (d) self-responsibility for learner-centered instruction. A five-point Likert scale was used to quantify degree of student satisfaction and to accommodate data comparisons.

Five behavioral objectives were developed to measure learning, as reflected by the final grade in the course. The learner will: (a) demonstrate mastery of course content by completing two objective-type paper/pencil tests; (b) identify his/her dominant style of learning by completing, scoring, and interpreting a learning style inventory and then citing three implications for the distance learning environment; (c) demonstrate application of the process of problem solving by planning an individual solution to a real-world problem related to course content; (d) analyze and evaluate a cooperative or group process after completing a collaborative case study to demonstrate information retrieval, further research, and application of content; and (e) demonstrate written communication skills by submitting a reflection paper on his/her personal learning experience and academic performance including the effectiveness of self-responsibility and self-direction .

The objective-type midterm and final examination were administered during the seventh and fourteenth weeks of the semester respectively to measure content mastery . A student portfolio (Shaklee, Barbour, Ambrose, & Hansford, 1997) was used to assess the four other behavioral objectives.

The concept of portfolio assessment was explained at the telecourse orientation. This information was also available in print and on the HLTED 01 web page. As part of the course syllabus, students were provided with a list of dates to submit work in progress and completed work. A skeleton Rubric of Competency Standards (see Appendix D) was also provided to assess progress with independent learner skills and with four specific assignments: (a) implications of the learning style inventory, (b) individual problem solving, (c) collaborative work, and (d) reflection on the learning process. Students determined their own criteria for "exceeds expectations" and "in progress." Throughout the semester, as students gained more content related information, they could improve upon their projects and, at the end of the semester, submit their best quality work as an indication of learning over time.

Student work in all five areas was compared to the rubric of standards that facilitates progressive judgment--below expectations, meets expectations, and exceeds expectations. These judgments are comparable to the traditional A-B, C, and D-F grades.

Chapter IV: Solution Strategy

Discussion and Evaluation of Solutions

The problem to be solved in this practicum was low retention in telecourses. Course completion in traditional courses is approximately 69%; in telecourses it is less than 45%.

Variables to predict success. Several studies have identified variables that can be used to predict achievement in the distance learning environment. With this knowledge, high-risk students can be encouraged to enroll in traditional classes and/or telecourse instructors will be able to help these students by employing specific interventions early in the semester.

Rotter's Internal-External Locus of Control Scale and Kolb's Learning Style Inventory were used by Dille & Mezack (1991) to identify predictors of high-risk community college telecourse students. Selected demographic data, locus of control, and learning style were correlated with both retention and academic success. Based on the findings of the study, a profile of a high-risk telecourse student was developed:

> . . . 25 years old or younger, divorced, with fewer than thirty college credit hours completed, a GPA lower than 3.0-2.9, a higher than average Rotter score (above 7.5), and a higher than average (25 or above) Concrete Experience score, a lower than average (below 5) AC-CE score (p. 34).

Conversely, older, married students with previous college experience, a GPA of 3.0 or better, with internal locus of control and a more abstract learning style are more likely to succeed. This disagrees with a recent finding by Darwazeh (1998) that locus of control did not significantly affect university achievement in either a traditional or a distance educational environment.

Stone (1992) concluded that when distance learners with external locus of control were exposed to regular telephone tutoring they actually completed course work at a faster rate than did distance learners with internal locus of control. The implication was that

learners with individual needs respond differently to instructional intervention. Specifically, telephone contact may be effective with only some learners.

Coggins (1988) explored the relationship between personal variables and successful completion of a baccalaureate degree via distance learning. No difference was found between completers and noncompleters in terms of gender, occupation, marital status, children or no children, distance from campus, or age. There was, however, a significant difference between completers and noncompleters in terms of educational level prior to enrollment, intent to earn a degree, amount of time since one's last credit course, and self-perceptions of academic ability. Of the noncompleters, 65.7% had no intention of earning a degree and noncompleters had less college experience. Completers had more recent college experience. Completers had an expectancy of doing superior level work; the expectency of noncompleters was to do average or satisfactory work.

Bink, Biner, Huffman, Geer, and Dean (1995) and Zimbaro (1993) found that age did not effect telecourse achievement. Fjortoft (1996) found that younger graduate students were more likely to persist in a distance program.

Bink (1995) gathered data on undergraduate continuing education students to determine the predictive value of variables within four categories: (a) demographic, (b) attitudinal, (c) course/college related, and (d) prior GPA. Prior GPA was the strongest predictor of telecourse achievement. Year in college and student perception of promptness of material delivery and feedback also correlated significantly with telecourse achievement. The potential demographic predictors of age, gender, income, and socioeconomic status did not impact telecourse achievement. Regarding previous telecourse experience, the findings supported those found by Dille and Mezack (1991) that no relationship was found between previous telecourse experience and telecourse performance.

Biner, et al. (1995) identified a personality profile of telecourse students and suggested that certain traits can predict achievement.

> . . . successful telecourse students are those individuals who are resourceful and prefer to make their own decisions. Moreover, they are not overly concerned about following social rules or conventions and may actually disregard them altogether in some circumstances. Finally, these students are introverted, self-indulgent . . . and tend to meet their responsibilities in an efficient, expedient manner, i.e., without being overly compulsive about completing tasks (p. 57).

This profile holds important implications for the incorporation of learner-centered instructional strategies, especially alternative methods of assessment, into the distance learning environment.

Learning styles. Gee (1990) examined the effects of preferred learning styles on course completion, perceived achievement, and attitude toward the distance learning environment. The *Canfield Learning Styles Inventory* was used to identify a learner typography for female graduate students attending weekly on-campus classes and weekly classes at a remote site. All students completed the course suggesting that motivation was likely due to the fact that the course was required for certification. Although the sample population was small, a trend was noted. Each learning style group displayed differences in attitude and academic achievement. Within the distance setting, independent/conceptual learners had the highest mean scores; social/conceptual learners had the lowest mean scores. Gunawardena and Boverie (1993) studied the relationship of adult learning styles to media, method of instruction, and group process. It was found that learning style does affect student satisfaction with other learners; Accommodators are most satisfied, Divergers least satisfied. This tends to support the trend noted by Dille and Mezack (1991) that Accommodators had the highest telecourse rate; Divergers had the lowest. Jones, Sullivan, and Klein (1996) compared the effects of matching learner preference for group or individual work on achievement and attitude. Students were either matched for the instructional treatment or not matched. It was expected that students whose learning preference matched the instructional treatment would achieve higher scores. This was not

the case. In fact, students unmatched for groupwork scored higher. The findings suggest a learning style preference may be more of a predictor for sociability as indicated by the increased amount of off-task behavior.

Fjortoft (1996) investigated the relationship of eight variables to adult student persistence, defined as continuing to the next year of study in distance education programs. Subjects were graduate students in a Doctor of Pharmacy program. Perceived intrinsic benefit (Franks, 1996) as measured by such factors as improved job performance, improved skills, and current knowledge was positively correlated with persistence. Younger students were more likely to persist in the program (the age range was late twenties to over sixty). Most interesting, however, was that persisters were not students exhibiting a high level of comfort with individual learning. Two explanations were suggested for this anomaly: only students with the skills in independent learning self-selected into the program and/or the students' learning style preference was not necessarily the optimal mode for improved performance (Jones, Sullivan, & Klein, 1996).

A study by Foell and Fritz (1995) explored the relationship between two cognitive styles, field-dependent and field-independent, and satisfaction with distance learning. Satisfaction was defined in terms of three attitudinal constructs: student perception of how the course was taught, skills and concepts learned, and relationship with the instructor. It was suggested that the fact that no statistically significant relationship was found between cognitive style and attitudes toward distance learning, holds implications for distance education. Most subjects were generally satisfied with the distance learning experience, found it to be unambiguous, and were neutral toward the difficulty and pace of the course. The course design allowed the instructor to proactively provide appropriate teaching strategies to address difficult learning conditions. Face-to-face meetings were scheduled three times during the ten-week course. These discussion sessions provided support for the field-dependent students, thereby lessening the importance of cognitive style in the distance education environment.

Utilizing Gardner's multiple intelligences theory, Diaz-Lefebvr, Siefer, and Pollack (1998) assessed preferred intelligences of 131 community college students participating in ten introductory psychology classes. The most frequent MI profile was bodily-kinesthetic intelligence, followed by interpersonal intelligence, spatial, linguistic, and logical-mathematical. Following the initial assessment, students were encouraged to choose from a variety of learning options designed for specific MI styles. It was observed that when MI techniques were used, the quality, depth, and analysis of student work improved from that of previous assignments. Students reported that motivation and efforts outside of class increased because they recognized the relevance of their assignments.

Schroeder (1993) administered the Myers-Briggs Type Indicator to approximately 4000 entering students to better understand individual differences in the learning process. Results indicated that entering students prefer the sensing mode to the intuitive mode, suggesting less independence and a need for structure, clarity, and authority. This is often frustrating for faculty who tend to teach toward the intuitive mode. As educational access is increased, the predominance of entering students preferring practical utility of knowledge is simply reflective of the preferred mode of the general population.

The literature suggests the potential use of learning style inventories to increase achievement and improve attitude in the distance learning environment. Interventions can be employed at an early stage to help students prepare for the non-traditional experience and/or faculty can design instruction to meet diverse learner needs. Bonham (1988) cautioned, however, that these instruments are problematic and when using inventory results, educators must take measures to minimize inventory weaknesses.

Learner-centeredness. After comparing content learning and affective perceptions of graduate students participating both in "live" and "remote" learning environments, Miller, McKenna, and Ramsey (1993) concluded that the two environments are not equivalent for adult learners and that it is necessary to enhance the remote environment to make it congruent to a face-to-face experience. The question posed by Gehlauf, Shantz,

and Frye (1991) was whether that which constitutes effective instruction in the traditional classroom is the same as that which constitutes effective instruction at a distance. Although academic achievement is an accepted criterion to determine differences between face-to-face and distance classes, more recent studies have looked at other variables that influence effectiveness, such as instructional design, technical production quality, and environmental conditions.

Wagner and McCombs (1995) identified geographic separateness as a catalyst for the utilization of learner-centered strategies. Others emphasize the appropriateness of the incorporation of learner-centered instructional strategies into the distance learning environment (Wolcott, 1996).

Weinstein (1996) discussed the concept of strategic learning wherein students, including distance learners, assume an active role in converting information to meaningful knowledge. There are five categories of knowledge that are requisite to strategic learning. Students must learn about (a) themselves as learners, (b) academic tasks that they will be expected to perform throughout their college experiences, (c) strategies for acquiring, synthesizing, and using knowledge, (d) methods to construct new understandings from prior content knowledge, and (e) contexts in which the new information can be used.

Tallman (1994) investigated nine variables that influenced student satisfaction and probability of completion in correspondence courses. It was concluded that there is an educational environment that enhances student satisfaction and persistence; this environment must include quality student support services (Dillon, Gunawardena, & Parker, 1992). As a recommendation for further research, the author suggested investigation of the importance of goal articulation as well as the need to consider multicultural diversity when generalizing student satisfaction to a larger population.

Interactivity and interaction. Walker and Hackman (1992) found the amount of information received by the student to be the strongest predictor of learning and satisfaction among distant students; nonverbal immediacy was a predictor of student desire to take a

course from the same instructor. This information led to a follow-up study (Hackman & Walker, 1995) where perceptions of students receiving face-to-face instruction were compared to the perceptions of students receiving the same instruction at a distance. No significant differences were found in any of the two groups' perceptions. It was concluded that if the technology is capable of content delivery and interactivity, and participants employ immediacy behaviors, then there is no difference between face-to-face and distance learning.

Saba and Shearer (1994) developed and utilized a model to verify the interrelatedness of the concepts transactional distance, dialog, and structure as defined by Moore (1990). Their study concluded that transactional distance decreased when dialog increased and structure decreased; transactional distance increased when dialog decreased and structure increased. Learner control increased the rate of dialog which decreased transactional distance; instructor control increased structure which increased transactional distance. The optimal instructional strategy is to find a balance between dialog and structure.

Multiple modalities. The comparative efficacy of multiple modalities for content delivery was investigated by Beare (1989). When comparing combinations of audiotape, videotape, and two-way audio telelecture, it was found that there was no significant difference in achievement or student satisfaction between live and distant students. Distance students did comment that they listened to lectures multiple times, benefited from vicarious discussions between the instructor and students at the transmitting site, and appreciated the convenience of the distance opportunity.

Caudill (1998) discussed the importance of varying teaching methods to include the basic teaching modalities of auditory, visual, and tactile. More importantly, multiple modalities must be included within each lesson rather than just utilizing one or two modalities on a given day. Additionally, students should be able to exhibit learning through alternative methods of assessment, specifically a multiple media portfolio.

Lane (1996) described a model of mixed media using off-the-shelf technologies. This model meets the needs of diverse learning styles, ensures optimal interaction, enhances the self-learning process, and reduces the sense of learner isolation.

Student preparedness. Williams (1996) stated that learner control does not assure achievement because students lack the competencies to make optimal use of the control afforded them. Student prior knowledge and ability are predictors of student success with learner control. That is, students who were able to identify the amount of instructional support they would need and could choose appropriate learning strategies in a problem-solving situation would be more successful with learner control.

Other. Zimbaro (1993) assembled a seven-member formative review committee to interpret data collected from telecourse students. This committee suggested the following interventions: (a) telecourse students should participate in a pre-registration assessment to identify "at risk" distance learners; (b) faculty should initiate communication with students early in the semester whether by phone or letter; (c) the importance of keeping on schedule with the course work should not only appear in the course syllabus, but be verbally reinforced by the instructor throughout the course; and (d) students should be assisted to establish a peer mentoring network. In the same study, telecourse students were asked to respond to the problem of low retention. Student recommendations included the following: (a) students be provided a student handbook, (b) course syllabi provide clearer information and contain a table of contents, and (c) review sessions should be more structured and include a printed review sheet.

Description of Selected Solutions

Thornburg (1997) defined two essential learning skills in a reality of unparalleled information growth: the ability to locate information related to the problem being solved and the ability to establish relevancy of the information. Thus, it is the writer's institutional context that dictates the strategies selected to solve the problem of low retention in telecourses. The challenge is to use instructional technology thoughtfully, meaningfully,

and effectively to support the educational objectives of a culturally diverse, urban community college and to make learning accessible, flexible, relevant, and academically rigorous.

Based on interviews and questionnaires administered to distance learning students at the writer's institution, students self-select a telecourse based on convenience, not on belief that it is a superior way to learn. Often times, distance education is the only option that a student has to continue his/her academic career.

To increase retention in telecourses it will be necessary to create a distance education environment that promotes student satisfaction, emphasizes learning outcomes and competencies, and guides students toward becoming more independent, empowered learners. This will be accomplished through the incorporation of both learner-centered and learning-centered instructional strategies, and the utilization of multiple modalities for content delivery and interaction. Certain procedural and technological modifications can be implemented easily; pedagogical changes will be more difficult to implement because students need time to transition from the traditional instructor-centered paradigm to one that focuses on learning-centered activities.

Consistency and continuity. As suggested by Wheeler and Batchelder (1996), HLTED 01 will be one course within a progressive two-year curriculum leading to an Associate degree at a distance. In August, 1997, the writer's institution partnered with 175 other colleges and 62 public television stations committing to offer a two-year Associate degree at a distance. By developing and publishing a two-year distance learning schedule that will be available in print and on the college web page, distance education students will be able to plan future enrollment in other related courses and to articulate academic goals (Dillon, Gunawardena, & Parker, 1992) knowing that an Associate degree is available at a distance. The writer believes that if learning-centered instructional strategies and the use of technology are reinforced in all telecourses, a student participating in subsequent

telecourses will have multiple opportunities to develop the competencies necessary to become an independent, empowered learner.

Variables to predict success. The literature suggests that knowledge of certain demographic data, personality traits, and learning styles may be useful to predict student success within the distance learning environment. While this information might allow counselors and instructors to incorporate interventions that would assist the "at risk" distance student, at the writer's institution, individual pre-screening assessments are not feasible. Most distance learners are unable to come to campus; it is reasonable, therefore, to assume that most will not see a college counselor before enrolling in a telecourse. Instead, the writer speculates that a type of pre-screening, in the form of an orientation to the distance learning experience, can be done on a group basis for all perspective distance learning students prior to the first telecourse broadcast. At this time, students will assess their personal readiness for the distance learning experience (Loser, et al., 1994). If a telecourse is not the best alternative, there are three options: (a) enroll in the traditional on-campus class, (b) enroll in HLTED 01 for a first-time telecourse experience, or (3) enroll in one of the other telecourses, with awareness of the need to develop special competencies to be a successful distance learner.

Learning styles. Since students self-select telecourses based on convenience, learning style determinations will not be used to predict academic success, but to help students construct meaningful knowledge about themselves (Bonham, 1988; Weinstein, 1996) and to encourage the expansion of style ranges. The *Canfield Learning Styles Inventory* was selected for this practicum because of its focus on the affective dimensions of student learning rather than on cognitive learner characteristics or multiple intelligences theory. A forced-choice format requires students to rank their most valued learning experiences in terms of conditions for learning, area of interest, and mode of learning. A fourth component, performance expectancy, is also included. Inventory scores reflect

comparison to preferences of the primary normative sample, community college students (Canfield, 1988).

Learner-centered and learning-centered. O'Banion (1999) distinguished between two terms that are used interchangeably in the literature, but are not synonymous. Learner-centered denotes a responsiveness to individual needs and describes the relationship between the institution and the student. Learning-centered evolved from competency-based education and emphasizes learning outcomes and outcome assessment.

Wagner and McCombs (1995) identify geographic separateness as a catalyst for the utilization of learner-centered strategies. Others emphasize the appropriateness of the incorporation of learner-centered instructional strategies into the distance learning environment (Wolcott, 1996). Since most of the courses taught at the writer's institution employ traditional, instructor-centered strategies, this variable could significantly affect retention. In HLTED 01, learning-centered, constructivist instructional strategies will be employed (Dunlap & Grabinger, 1996; Sandholtz, Ringstaff, & Dwyer, 1997; Wilson, 1995). To supplement the traditional paper/pencil test to assess content learning, alternative methods of assessment, including portfolios (Nelson, 1999; Shaklee, Barbour, Ambrose, & Hansford,1997), problem-based learning (Savery & Duffy, 1996), and groupwork (Aronson, 1997; Cohen 1994) will provide options for students to demonstrate higher-order learning and thinking (Young, 1997).

Interactivity and interaction. Utilizing cable television for content delivery creates a problem of restricted interaction. Wagner (1994) differentiated between interaction and interactivity. Interaction is an attribute of effective instruction and instructional design; interactivity an attribute of the delivery system. Although neither faculty nor students have computer access through the writer's college, there is much that can be done to add interaction to programs cablecast over the college's educational access channel. In addition to using telephone, e-mail, and fax for asynchronous discussion, students will form

learning teams, 15 hours of on-campus review sessions will be scheduled, and personal meetings with the instructor may be arranged.

While cable television does support learner-content interaction, it does not accommodate the two other types of interaction described by Moore (1989), learner-learner and learner-instructor. Wheeler and Batchelder (1996) found that instructors typically schedule office hours during the traditional work day and this creates a barrier for student-instructor interaction. McHenry and Bozik (1995) suggested that a variety of technologies be utilized to support lost interaction. Throughout the semester, HLTED students will be encouraged to work in learning teams, complete collaborative assignments, and to employ the process of problem-solving before soliciting assistance from the instructor. The instructor, however, will be available by phone during the evenings and on weekends. Students will also be able to leave voicemail messages and communicate by email 24 hours a day. All messages will be returned within 48 hours. The HLTED instructor will try to initiate phone calls to students not submitting coursework at three critical times during the first part of the semester, weeks 4, 5, and 8.

Technology will be used not only to increase interaction but to decrease the time-delay of material distribution and instructor feedback (Wheeler & Batchelder, 1996). Student assignments can be faxed or emailed and students will receive feedback within seven days (Rekkedal, as cited Bink, et al., 1995).

Multiple modalities A telecourse is a pre-produced integrated learning system consisting of a series of video programs, a textbook, study guide, faculty manual, localized course syllabus, and, in some instances, multimedia supplements (Ball, 1987; Levine, 1988). While this off-the-shelf model is designed to enhance self-directed learning, the design of HLTED 01 will include utilization of video, print, and Internet for content delivery. An expanded course syllabus containing specific course expectations, a rubric of competency standards, a calendar, copies of additional readings, and a detailed explanation of all assignments will be distributed to HLTED students at the telecourse orientation and

be posted to a course web page for information retrieval "on demand." The course web page will include a section for announcements and a section for weekly e-mail discussion questions.

Student preparedness. In addition to developing technology literacy (Wright, 1994), students must be provided the opportunity to develop skills to effectively function in a distance learning environment so that ". . . lack of familiarity is not a barrier to choice" (Rubio, 1993, p.225). During the telecourse orientation, students are told the differences between the traditional learning environment and the distance environment but are not given an opportunity to develop and practice, over time, those skills necessary to make the transition successfully. A module on empowered learning will be included as part of the course content of HLTED 01 and multiple modalities will be utilized to deliver this information to distance learning students.

Although distance learning students tend to accept the limitations of technology-mediated instruction (Franks, 1996; Thomerson & Smith, 1996; Wheeler & Batchelder, 1996), students will be taught to use the process of problem-solving to deal with technological difficulties.

Report of Action Taken

Action taken by the writer consisted of: (a) extensive preparatory tasks, including the design of the instructional intervention and product production, and (b) facilitation of the instructional strategies during the eight-month implementation period.

Redesign of the telecourse orientation. A major preparatory task occurred during the four weeks preceding implementation. It was necessary to thoughtfully redesign the telecourse orientation. It had been observed that, after attending the telecourse orientation, most adult learners enrolled in the program exhibited cognitive understanding of the differences between a distance course and the traditional on-campus course. Through a simple question/answer discussion at the conclusion of the general telecourse orientation, the learners could recall the differences in content delivery, interaction, the

submission of assignments and examinations, and the need for learner independence. Once geographical distance and "transactional distance" (Moore & Kearsley, 1996) increased, however, the less autonomous learners reverted back to familiar responses. Learners are not equally prepared for the task of assuming responsibility for their own learning process. "The more highly autonomous the learners, the greater is the distance they can be comfortable with . . . . " (Moore & Kearsley,1996, p. 206). From the writer's observations, it appeared that the more autonomous learners completed and persisted with telecourses. A review of retention data and the results of student surveys and interviews implied that students chose to withdraw from a telecourse when they fell behind in coursework rather than to exercise alternative options that would facilitate course completion.

The task was to redesign the existing telecourse orientation to provide an effective instructional intervention that specifically addressed the knowledge, skills, attitudes, and behaviors requisite for successful distance learning. The desired output was a self-directed, empowered learner who not only would understand how to complete a distance learning course but would make effective choices about his/her learning process to ensure course completion. A retention rate of 45% suggested that 55% of the learners withdraw from telecourses, citing the same reasons as do students withdrawing from traditional courses.

Backward mapping, a design tool wherein an ideal situation is visualized and then the strategies for achieving the ideal are developed (Salisbury, 1996), was used to answer the essential question: what would the ideal orientation look like and how would it be achieved? The following conditions would exist within an ideal telecourse orientation:

1. Times, locations, and agenda would be distributed prior to the orientation session.

2. Information would be available in print, on cable television, and on the Internet.

3. Orientations would be offered midday during the week, on a weekday evening, and on a Saturday.

4. Students could easily locate classmates and instructors within a designated section of a larger auditorium.

5. Representatives from various divisions of Student Services (and management) would be available at each orientation session.

6. Faculty would be present with their classes to assist with the distribution, completion, and collection of materials, as well as to assist students form learning teams.

7. Students would complete a self-assessment to determine personal readiness for the distance learning experience.

8. Students could choose to attend workshops to begin skill development for successful distance learning. Topics for these workshops would include use of a word-processor, email, learning styles, collaboration, interdisciplinary projects, portfolio assessment, peer-editing, problem-solving, research techniques, and reflective writing.

9. Print material would be minimal, but all information would be retrievable after the orientation through the use of various media--videocassette, television, and Internet.

10. Students would have the opportunity to practice the competency skills needed for successful distance learning in multiple contexts and to receive feedback before physically separating from classmates and instructor.

Performance objectives describing what the learner will be able to do after attending the telecourse orientation were developed (Dick & Carey, 1996). These performance objectives consisted of eleven intellectual skills requiring recall of new information (see Appendix E).

A second set of learning objectives requiring the higher order thinking skills of reasoning, procedure learning, problem-solving (Kearsley, as cited in Schneider, 1994), and transfer of learned skills were also developed. These skills improve over time if learners are given an opportunity to practice the skills and to apply new knowledge with

informative feedback. Performance criteria for the seven learning objectives in this category are provided in a Rubric of Competency Standards (see Appendix D).

For students to accomplish this second set of learning objectives, Gagne's nine universal steps to instruction (as cited in Schneider, 1994) must be incorporated into the instructional design. Only the first four steps, those leading up to and including presentation of material, occurred in the telecourse orientation. Five additional steps would have to occur within the content of the individual telecourses: (a) provide guided learning, (b) elicit practice, (c) provide feedback, (d) assess performance, and (e) enhance retention and transfer.

Develop an instrument to measure student satisfaction. Biner's (1993) work provided the basis for the development of a localized attitudinal assessment instrument. After reviewing surveys used by other community colleges, a list of informational items was generated by the writer and the District Director of Technology to collect student information. The instrument (see Appendix C) consisted of 38 items that were grouped into the seven categories: prior higher education experience, quality of cablecasts and support service, and satisfaction with instructor preparation, interaction, feedback, and self-responsibility. A five-point Likert scale was used to quantify degree of student satisfaction and to accommodate data comparisons.

The writer did not find other institutions addressing the dimension of personal responsibility in student satisfaction surveys. However, this category is extremely important to this practicum because it focuses on the student's active role in, and self-responsibility for, the learning process, and reflects degree of student independence and self-efficacy.

Redesign of HLTED 01 curriculum. The HLTED 01 curriculum was redesigned to include a module on empowered learning. On-campus meetings provided students the opportunity to learn how to: (a) interpret the results of a learning styles inventory and cite implications for distance learning; (b) develop a personal technology plan for class

participation; (c) peer-edit and prepare written assignments that are accurate, organized, and grammatically correct; (d) apply the elements of problem solving to a real world problem; (e) work collaboratively; (f) develop a reference list for written assignments, including both print and electronic sources; and (g) evaluate personal performance. Each of eight assignments required demonstration of these skills and students were given an opportunity to resubmit coursework after receiving instructor feedback.

The expanded course syllabus. Students enrolled in HLTED 01 received an expanded course syllabus. In addition to general course information, the expanded syllabus included an explanation of the portfolio option, a rubric of competency standards, and a detailed schedule of course assignments designed to incorporate higher order thinking skills and corporate efficiency skills.

Media selection. To accommodate diverse learning styles as well as varying degrees of learner autonomy, a mix of media was utilized for both publicizing the telecourse orientation and for delivery of instructional content. First time distance learners were required to attend the face-to-face orientation to maximize structure and dialog (Moore & Kearsley, 1996), at least initially. All instructional content was available in print and on the Internet. It was intended that this information would also be available on video, but because of personnel changes, the video production was not completed until several weeks after the telecourse orientation.

Throughout the first four months of implementation, during the fall semester 1998, a commercial web course template was used to put HLTED 01 online. For the second four months of implementation, during the spring semester 1999, this medium was replaced with a customized HLTED web page.

Implementation

Throughout implementation of this practicum, the writer provided leadership by assuming the dual role of Distance Learning Coordinator (interacting with management, faculty, and staff) and health education instructor (interacting with HLTED students).

During the first month of implementation it was critical that students be thoroughly prepared for the distance learning experience. Equally important was the enlistment of systemic support from all stakeholders within the college community. The services of management and staff were required throughout the practicum implementation. In week 1, the writer met with management and staff to ensure that each person was prepared for the upcoming telecourse orientation and telemester. Two secretaries at the district office were recruited to answer telephone calls regarding telecourses in general. Both were given copies of the print version of the *Student Guide to Telecourses* to distribute to walk-in students and/or to mail to students not having access to the Internet; both were then guided through the telecourse web page. The answers to almost all student inquiries could be found on the college web page and, therefore, were easily accessible to both college personnel and students with Internet access. This information was continually updated by the district web master. Management Information Services agreed to track enrollment during both semesters of implementation and to retrieve data for future analysis. Assistant Deans and the Dean of Instruction would enforce the mandatory requirement of student attendance at the telecourse orientation. To facilitate this task, a memorandum providing standard answers to questions frequently asked by students was distributed to all stakeholders (see Appendix F). The writer met with Media Services to ensure that copies of all video programs were available for student viewing in the Library Media Center.

Management and staff were prepared. Faculty had been reminded of their responsibilities for the telecourse orientation. In week 2, all materials to be distributed during the orientation were assembled in the Office of Distance Learning. These included: the *Student Guide to Telecourses*, the self-assessment *Are Telecourses for You?*, the HLTED syllabus, the *Canfield Learning Styles Inventory* , and the overhead transparencies.

The telecourse orientation. The telecourse orientation was scheduled to take place during week 3, that is, two weeks after the start of the traditional college semester. This

provided those students who were unable to enroll in traditional classes an opportunity to complete their coursework via distance learning The writer, in the role of Distance Learning Coordinator, conducted the telecourse orientation three times--on a Wednesday at noon, a Thursday evening, and a Saturday afternoon. The final orientation was held one day prior to the last official day to add a class.

When students entered the general meeting area, an overhead projection directed them to specific class areas where they had an opportunity to meet classmates and to begin forming learning teams. After this informal introductory period, each student completed a self-assessment entitled *Are Telecourses For You?*

The next 45 minutes were devoted to a discussion of how to make the transition to a distance learning environment. Overhead transparencies were used in conjunction with the verbal presentation. Ideally, a web page interface should be used to visually support instructional content and to provide a more authentic experience with web-based learning. At the completion of the discussion, students were asked to recall differences between traditional and distance learning regarding: (a) content delivery, (b) interaction, (c) submission of assignments and examinations, (d) learning teams and, (e) the need for learner independence. When all general questions were answered, students moved to breakout rooms to receive course materials from individual instructors.

HLTED 01. In the role of health education instructor, the writer met with students enrolled in the HLTED telecourse. During this first 30-minute class meeting, students received the expanded course syllabus and formed learning teams. An initial assignment was designed to encourage the processes of reflection, self-directed learning, problem-solving, and articulate communication. This assignment was simply an autobiography, but with specific parameters. Students were provided the following instructions:

> Tell me a little about yourself--who you are and why you are taking the HLTED telecourse. You might want to include something you learned about yourself from the survey, *Are Telecourses for You?* and/or the *Canfield Learning Styles*

> *Inventory*. Next, browse through your textbook and identify two or three topics that trigger your interest. Think about (we call this process reflection) these topics and write about what you already know and what other things you wonder about and might want to research. I want to know what it is that you want to learn in this health education course (Nelson, 1998, p.4).

An on-campus meeting was scheduled for the following week (week 4) to discuss the completed assignment. Students who could not attend this scheduled session arranged an alternative day and time to meet. The writer subsequently met with two groups of students.

During week 4, the 2-hour, on-campus meeting was divided into four mini-units: (a) solving course logistical problems, (b) clarifying the concept of self-directed learning and the non-linear pursuit of health education topics, (c) providing a rationale for course assignments that incorporate the competency standards, and (d) discussing the topic of transition to technology-mediated instruction.

Through class discussion during this last week of the first month of implementation, it was determined that most problems pertaining to course logistics resulted from students not reading the course syllabus and failing to seek solutions from learning team members. A more important problem evolved from the complexity of the software product selected for online support. For some students, difficulty with user names and passwords, and unfamiliarity with other features of the support page, discouraged them from participating in online interaction. For these students, threaded discussions were abandoned and email became the primary medium for interaction.

Week 4 was the college's official first census. Students who did not attend the orientation or the first on-campus meeting of the HLTED class were officially dropped from the course.

To summarize, the first month of implementation was a critical time period for the writer to lay the foundation for empowered learning. It became apparent to the writer that initial face-to-face contact was extremely important if learners were to succeed in a non-

traditional learning environment, independent of time and place. During weeks 3 and 4, the writer responded to requests for face-to-face meetings with the smaller learning teams and was available by telephone between the hours of 8 a.m. and 10 p.m. seven days a week. A mail-list was established for students with email addresses to encourage collaborative problem-solving and to disseminate additional course-related information. It was intended that the writer would telephone students who did attend the telecourse orientation but did not submit the first assignment. This was not possible because of the unforeseeable amount of time that was needed to assist those students who did exhibit a commitment to participate in the HLTED telecourse.

If month 1 laid the foundation for empowered learning, then month 2 can be characterized as a time for guided practice in the development of the basic competency skills requisite to successful distance learning. It was not until month two (week 5--three weeks into the telemester) that the writer found time to respond to the first HLTED content-related assignment. This assignment related directly to information in the textbook, the study guide, and the first video program. Students were to use information gleaned from a self-assessment to: (a) write an in-depth description of current health status and lifestyle choices, (b) develop and prioritize three health/wellness goals, and (c) select just one to begin working on immediately. Grading criteria was carefully explained. Since this was essentially an entry piece, the goal was to demonstrate one's ability to: (a) follow instructions, (b) interpret surveys, (c) communicate ideas, (d) share work with others, (e) edit and revise, (f) use a word processor, although a typewriter would be acceptable, and (g) select only quality work for submission. It was emphasized that students were to discuss work with members of the learning team, edit each other's writing, make revisions, and submit only their best effort.

As assignments were submitted, it was apparent that students were not following the instructions specifically set forth in the course study guide, nor were they collaborating and/or peer-editing.

During week 6, a second on-campus meeting was held. The two-hour session was again divided into segments: (a) questions and answers, (b) how to effectively be part of a learning team, (c) how to peer-edit, and (d) how to systematically solve real-world problems. Students unable to attend this session made arrangements to get class notes or and audio tape from a learning team member.

The importance of alternative assessment was reemphasized and students began to recognize its value. An academic portfolio option had been designed to accommodate varying degrees of learner autonomy and academic experience. The focus of the portfolio was on the development of basic skill competencies within the context of Health Education 01, rather than on the reproduction of facts, and the students were guided to determine personally relevant learning goals and authentic learning activities. Once students received instructor feedback on individual assignments, they were encouraged to reflect on their work, make improvements, and resubmit these artifacts as part of their course portfolio. Additionally, students were required to complete an objective-type midterm and final examination.

During weeks 7 and 8 of implementation, the writer's role progressively shifted from that of information disseminator to facilitator and mentor. The greatest problem became one of assignment management; that is, providing timely feedback to students submitting coursework via fax, email, and/or snail mail. Once again, it became impossible for the writer to initiate communication with any student failing to submit assignments. Enrollment was tracked at week 8.

A traditional objective-type midterm examination was administered during week 9, the first week of the third month of implementation. All HLTED students were required to attend the on-campus administration of this examination. Any student not completing the midterm examination, and not making an alternative plan for its completion, was officially dropped from the course. Four students were unable to complete the examination as scheduled. Each selected to complete a comprehensive course examination at the end of the

semester. The writer corrected midterm exams and other course assignments during week 10.

The on-campus meeting scheduled during week 11 of implementation was divided into only two segments: (a) researching information and (b) guided practice in collaboratively solving a real-world problem. The guided practice allowed the writer to observe the collaborative process of the small learning teams. Some of these teams had to be reorganized because of students withdrawing at midterm. Drafts of collaborative projects were reviewed during week 12. Enrollment was tracked at week 12.

The role of the writer continued to evolve from a facilitator and mentor to one of coach. Although the difference may be considered subtle, coaching techniques focus on improved performance and, in this context, team-building strategies.

Throughout the fourth month of implementation, the writer functioned as an academic coach, working both with individuals and learning teams to continually improve performance. During weeks 13, 14, and 15, the writer responded to student initiated communication. It was no longer necessary to just react to problems; rather, coaching strategies were employed proactively. Each student was encouraged to improve performance by reflecting on instructor feedback, resubmitting coursework, and selecting additional work to demonstrate that learning had occurred during the semester. Students initiated both email and telephone communication. Student portfolios were submitted and a final examination was administered during week 16. Enrollment was tracked after week 16 and course completion data was obtained at the end of the college semester.

Summative evaluation. The summative evaluation plan was implemented at the end of the fourth month. It consisted of three levels of evaluation: (a) attitudes, (b) learning outcomes, and (c) learning transfer (Smith & Ragan, 1999). Reactions to the general telecourse orientation were collected from students, faculty, staff, and management through the use of interviews, informal conversations, and an exit questionnaire. Additionally, HLTED 01 students were asked to include a personal reflection on the effectiveness and the

relevance of the module on empowered learning as part of their academic portfolios. Secondly, faculty observations, number of "logistical" inquiries, and student feedback were be used to analyze student performance and improvement relative to the learning objectives developed for the general telecourse orientation (see Appendix E). Thirdly, the Rubric of Competency Standards (see Appendix D), defining basic competency performance, was used to assess how well learning transferred from the orientation to HLTED 01.

Period of implementation. The above action was implemented over two semesters; the instructional interventions were administered to one group of students during the fall semester and the procedure was repeated with a different group of students in the spring. Although every effort was made to ensure congruency of the interventions employed, it is important to note the one modification to the instructional intervention that occurred as a result of formative evaluation within the first month of implementation. During the fall semester 1998, a commercial web course template was used to put HLTED 01 online. During Spring 1999, this medium was replaced with a customized HLTED web page with a simplified interface. Fortunately, there was time between semesters for the writer to design this web page.

The commercial course delivery template consisted of more features than were necessary for online support. User name and password access discouraged some students from participating in online interaction. A side navigation bar provided too many options for the student new to online learning. The customized, simplified course page consisted of just six contextual links to: (a) the course syllabus, (b) notes from the on-campus meetings, (c) questions to provoke email discussion, (d) due dates for assignments and on-campus meetings, (e) suggested individual health plans or mini-projects, and (f) links to online health resources.

During weeks 17 and 18 the writer personally visited all telecourse faculty, managers, and support staff. The purpose of the visit was to thank each one for his/her

effort that collectively make it possible for us to offer education at a distance. All were prepared for the upcoming telecourse orientation and telemester. Materials for the telecourse orientation were assembled in the Office of Distance Learning.

The telecourse orientation was repeated three times during week 19 of implementation. In the role of health education instructor, the writer met with students enrolled in the HLTED telecourse for 30 minutes. This initial meeting differed from the one held in week 3 in one aspect. The writer personally checked that each student had indeed formed a learning team with at least five other classmates.

In week 20, two on-campus meetings were schedule to accommodate diverse student schedules. Another difference occurred. In week 4, students unable to attend the on-campus meeting had to arrange to get class notes or an audio tape from a learning team member. Using the simplified, customized web page allowed notes from the on-campus meetings to be posted on the HLTED web page. This proved beneficial to students wanting to review the session and to compare their perceptions with that of the instructor. Week 20 was the college's official first census. Students who did not attend the orientation or the first on-campus meeting of the HLTED class were officially dropped from the course.

Most students submitted their first assignments (the autobiography and an individual health plan) in person at the on-campus meeting rather than sending them by mail or email. This was consistent with student behavior exhibited during week 4.

During week 21, the writer received noticeably fewer logistical questions when compared to week 5. The delay time for providing feedback on student assignments, therefore, decreased. At the on-campus meeting held in week 22, more time was devoted to peer-editing. Under the guidance of the writer, students had the opportunity to actually edit samples of student work. Volunteers had their first content-related assignment edited by a classmate. Notes from the on-campus meeting were posted on the course web page for review and for those students unable to attend the face-to-face session.

During weeks 23 and 24, the writer had more time to work with students on alternative assessment, not only the portfolio option, but the selection of a final project relating to actually experiencing the process of making a lifestyle change. Students used both email and the writer's home telephone to initiate content-related discussion. Enrollment was tracked at week 24.

A traditional mid-term examination was administered during week 25, the first week of the sixth month of implementation. Any student not completing the midterm examination, and not making alternative plans for its completion, was officially dropped from the course. One student was unable to complete the examination as scheduled and elected to complete a comprehensive course examination at the end of the semester. The writer corrected midterm exams and responded to all other course assignments during week 26.

Attendance at the on-campus meeting scheduled for week 27 was high. Students appeared to be comfortable with the concept of learning teams. There was ample time during the class session for collaborative work. Small groups began solving a real-world problem. The process was continued outside of class via telephone and/or email. Drafts of collaborative projects were reviewed during week 28. Enrollment was tracked at week 28.

Throughout the last month of implementation (weeks 29 through 32), the writer functioned as an academic coach working both with individuals and learning teams to continually improve performance. It was a pleasure to respond to student work that was thoughtfully prepared; however, grammatical errors made the writer question if the process of peer-editing was being employed. During week 32, student portfolios were submitted and a final examination was administered. Enrollment was tracked after week 32 and course completion data was obtained at the end of the college semester.

Chapter V: Results

Results

The problem to be solved in this practicum was low retention in telecourses. Course completion in traditional courses during the fall semester 1997 was 64.7%; during the spring semester 1998 course completion was 65%. In telecourses, course completion during the fall semester 1997 was 45%; during the spring semester 1998 it was 54%. It is the writer's opinion that course completion, or retention, in telecourses should be equal to that in traditional on-campus classes.

The goal of this practicum was to increase retention in a health education telecourse, HLTED 01, by: (a) designing and implementing a competency-based orientation to the process of distance learning (b) incorporating learning-centered instructional strategies into the HLTED curriculum, and (c) utilizing a mix of media for content delivery and interaction.

There were three expected outcomes for this practicum as identified in Chapter III.

Outcome 1. It was expected that, when compared to data collected during the 1997-1998 academic year, student retention in the telecourse HLTED 01 would increase to at least 60%. Retention is defined as the number of students completing the course when compared to the number enrolled at Census #1 (enrollment at the fourth week of the semester).

This objective was not met.

Although retention did not increase, there was a twofold shift in the retention pattern: (a) students self-selected to withdraw from the telecourse during a three-week period immediately following the telecourse orientation and (b) students electing to use the Internet for course support exhibited a higher retention percentage.

Outcome 2. It was expected that student satisfaction with four dimensions of the distance learning experience would increase. A telecourse student evaluation survey was

administered prior to the final exam to determine the degree of student satisfaction relating to: (a) instructor preparedness, (b) quality of interaction, (c) instructor feedback, and (d) self-responsibility for learner-centered instruction.

This objective was met in all four dimensions.

Outcome 3. It was expected that student achievement as defined by GPA would increase. An average GPA was determined for all students completing the telecourse HLTED 01. As specific interventions were employed, the collective GPA in HLTED 01 would exhibit improvement.

This objective was met. The collective grade point average increased from 2.25 and 2.66 for Fall 1997 and Spring 1998 respectively, to 3.35 for Fall 1998 and 3.04 for Spring 1999.

Discussion

This exploratory report examined the relationship of four personal variables (readiness for the distance learning environment, student satisfaction, learning style preference, and alternative assessment option) to retention and achievement.

Retention patterns. Because an initial enrollment of >100 students was anticipated, it was expected that student retention in the telecourse HLTED 01 would increase to at least 60%. Retention is defined as the number of students completing the course when compared to the number enrolled at Census #1 (enrollment at the fourth week of the semester). Although this objective was not met, Figure 1 shows a definite shift in both initial enrollment numbers and the pattern of retention.

Enrollment tracking in the HLTED telecourse for both Fall 1997 and Spring 1998 denotes a larger initial enrollment followed by continual decline in enrollment throughout the semester. During the fall semester 1997, 70 students were enrolled at C1; 24 students completed the course. In Spring 1998, 73 students were enrolled at C1; 27 completed the course. Retention during these semesters was 34% and 36% respectively.

In contrast, initial enrollment in the HLTED telecourse during subsequent semesters is lower, followed by a sharp decline immediately after the telecourse orientation, and remaining constant for the balance of the semester.

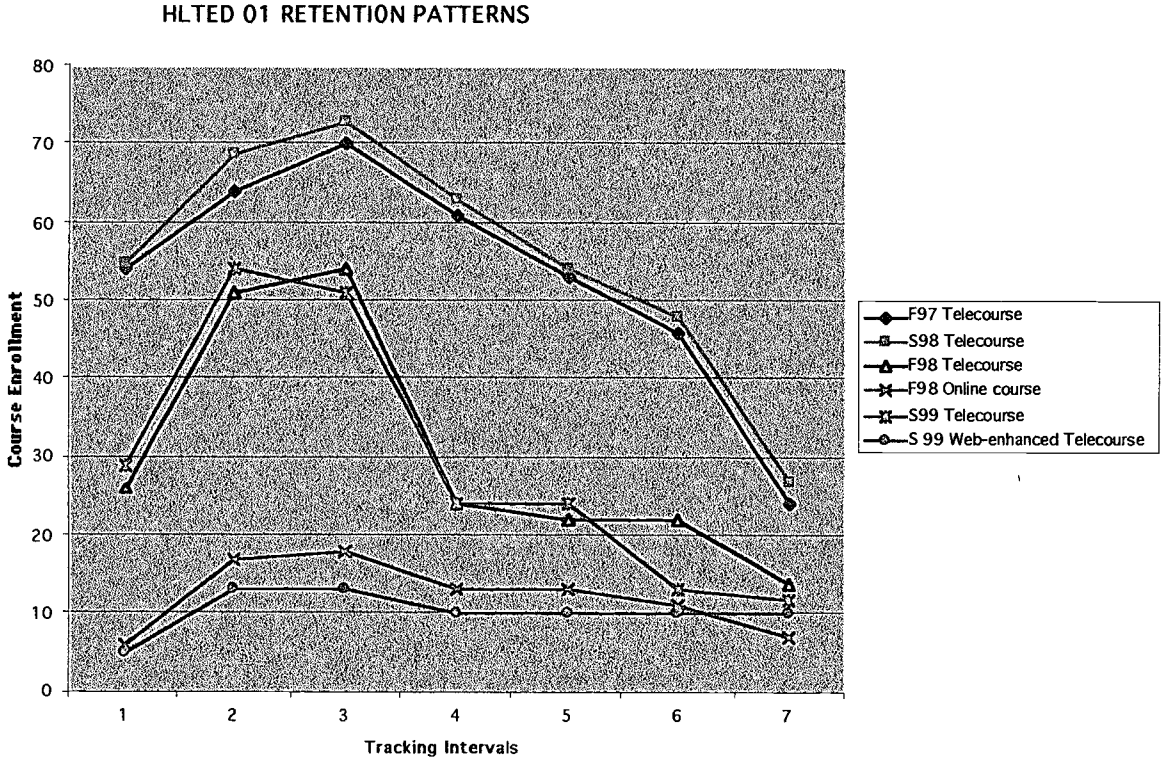

Figure 1. A comparison of enrollment patterns in the telecourse HLTED 01 preceding and following a technology-mediated instructional intervention.

During Fall 1998, 72 students enrolled and 21 students completed the course. For comparative purposes, retention was 29%. During Spring 1999, 64 students enrolled and 23 students completed the course. Retention was 36%. Fewer students selected the telecourse sections with World Wide Web support. During the fall semester 1998, students with Internet access had the option of using an integrated software product for course support. Of the 18 students choosing to use web support, seven completed the course. Retention for this group of students was 39%. During the spring semester 1999, students had the option of using a very basic HLTED 01 web page for course support. Of the 13

students choosing this supplemental medium, 10 completed the course. Retention for this group was 77%. In both of these Internet sections (Fall 1998 and Spring 1999) enrollment was more consistent throughout the semester and even increased slightly because utilization of multiple modalities for content delivery accommodated idiosyncratic starting dates.

It is the writer's opinion that the shift in the retention patterns resulted from two factors: (a) utilization of the Internet as a course support tool, and (b) a process of pre-screening. A readiness questionnaire was administered to all telecourse students during the telecourse orientation. Additionally, all students enrolled in the HLTED 01 telecourse completed the *Canfield Learning Styles Inventory*.

Readiness questionnaire. Each student attending the Fall 1998 telecourse orientation completed a self-assessment entitled Telecourse Readiness Questionnaire (see Appendix A). The responses to three questions are of particular interest. Question 7 addressed the amount of time the student could devote to a distance course. Of those responding, 18% indicated that they had less time to devote to a distance class than to an on-campus class. Question 6 addressed instructor feedback. Of the respondents, 24% indicated that they needed faculty comments on assignments within a few days. Based on these responses, it is not surprising that there was a 20% drop in enrollment immediately following the telecourse orientation; that is, 20% of the students self-selected out of the distance learning environment when it was explained that telecourses are more time-consuming than a traditional course and that instructor feedback on assignments is generally delayed.

The intent of selected responses to question five is ambiguous. The question read "When an instructor hands out directions for an assignment, I prefer . . . ."
While 10.3% of the students prefer "Figuring it out myself," 82.8% prefer "Trying myself, then asking for help." The response items fail to identify the source from whom the student would seek assistance. When questioned further, students said they would ask either the instructor or a classmate for help.

The implication of these trends is that there is a need for both academic advising for telecourse students as well as a preparatory curriculum for the distance education environment. Both of these interventions should occur before a student enrolls in a telecourse. The fact that only 3% of the students responded that coming to campus on a regular schedule was "easy," suggests that telecommunication technologies be utilized as much as possible to deliver these interventions to prospective students.

Ten additional multiple-choice items were added to this assessment to solicit information pertaining to previous telecourse experience, learning style, learner autonomy, and access to computer technology (see Appendix B). In Spring 1999, responses to the initial 10 questions were consistent with the response pattern for Fall 1998. Of this second group of telecourse students, 19% indicated that they had less time to devote to a distance class than to an on-campus class; 26% indicated that they needed instructor comments on assignments within a few days.

Insights were gleaned from five of the questions added to the revised survey. 58% of the students responded that they ". . . like to explore interesting things even if I won't be tested on them." Considering the demographics of the sample population, this response supports an observation reported by Spoon and Schell (1998) that African American women between ages 35 and 44 tend to be most incongruent with a traditional, teacher-centered instructional approach.

Question 15 addressed performance expectancy. Of those responding, 75% expected to perform above average; 20% expected average performance; only one respondent expected to perform below average. Since 78% of the respondents were enrolled in a telecourse for the first time, there is an apparent interplay between these two factors. First time telecourse students expect that watching a television course will be easier than a traditional course and, therefore, have extremely high performance expectancy.

Response to question 18, that only 24% supplemented material in the textbook with either library or Internet research, is evidence that a majority of telecourse students are failing to utilize a skill that is requisite to success in a distance learning environment.

Two questions addressed access to technology. The fact that 25% of the students do not have access to the Internet justifies use of multiple modalities for content delivery and interaction.

Learning Style Inventory. Students enrolled in the HLTED 01 telecourse completed and scored the *Canfield Learning Style Inventory*. They were encouraged to examine the relationship between personal preferences and what they would actually experience in the distance learning environment. Then, the process of problem-solving was employed to help students identify options for resolving incongruency between learning preferences and the course structure.

A quartile format was used to identify stronger, or weaker, than usual group preference for specific components of the educational experience. Of the eight conditions for learning, four (peer, competition, instructor, and independence) are particularly relevant to the distance environment. Figure 2 summarizes group responses for four conditions for learning.

The group summary indicated that the telecourse students exhibited a moderately low preference for teamwork; yet, the structure of the telecourse requires that students form learning teams and assist one another with course logistics and content discussion. Students who fail to participate on a learning team are often dissatisfied because they are unable to get immediate answers to questions from the instructor. Regarding other conditions of learning, telecourse students exhibited a low preference for needing to compare personal performance to others and needing to establish a warm relationship with the instructor. Telecourse students exhibited a high preference for working alone and doing things independently.

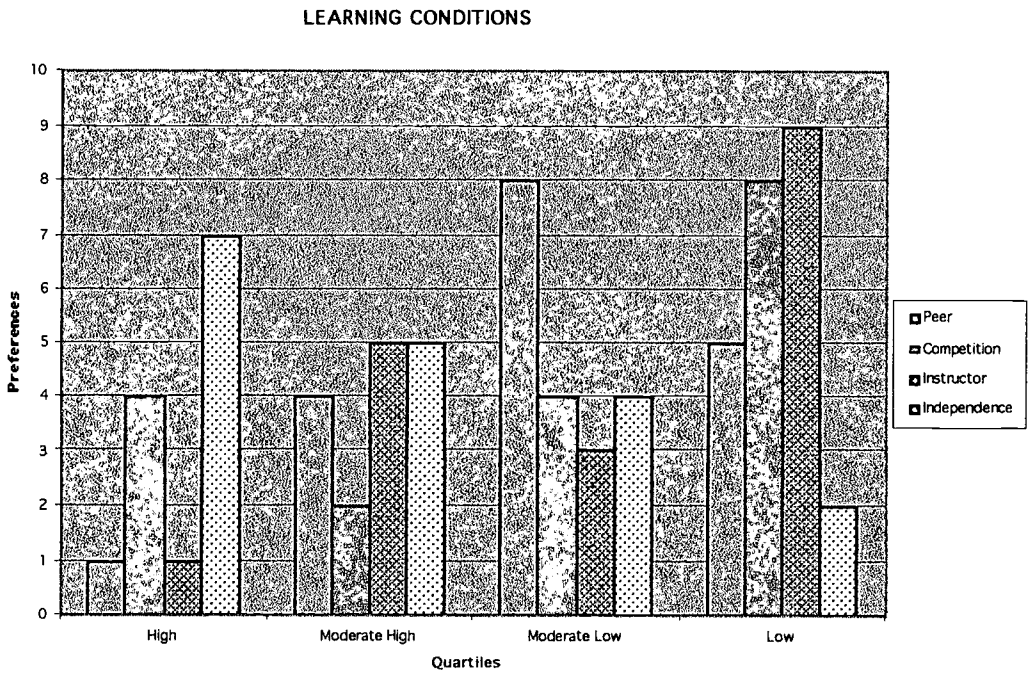

Figure 2. Summary of scores for telecourse students for four conditions of learning. High and low quartiles indicate extreme group preference/aversion.

It is the writer's opinion that the peer scale, as one measure of a student's learning style, has a profound effect both on student satisfaction within the distance environment and on student achievement. Exit interviews with students completing the course tend to reinforce this opinion. Initially, most students resisted the concept of forming learning teams, exchanging names, phone numbers and/or email addresses and committing to regular interaction pertaining to coursework. In all cases, however, it was the cooperative experiences that were found to be most supportive and motivating for course completion.

The Canfield Learning Styles Inventory also assesses performance expectancy. As a group, the distance learners expected their performance to be outstanding or superior; no one expected to do poorly. Student interviews suggest that students, unaccustomed to falling behind with assignments or encountering difficult coursework (the collaborative assignment), would drop the course rather that exercise alternative options to facilitate course completion, especially if they felt receiving an "A" had been compromised.

Student satisfaction. Sixteen items from the Telecourse Evaluation survey (see Appendix C) were related to four specific dimensions of student satisfaction: instructor preparation (item numbers 17, 29, 31, 34), interaction (item numbers 11, 15, 41, 42), feedback (item numbers 19, 32, 33, 40), and personal readiness (item numbers 38, 39, 43, 44). Two additional items (numbers 24 and 45) were used to assess overall satisfaction with the telecourse experience. Differences in mean response between students enrolled in HLTED during the fall semester and students enrolled during the spring semester were significant at the .05 level for five of the items (see Table 1).

Table 1. Results of t-Test for Differences Between Two Independent Means

		Fall 1998		Spring 1999		
Item #	Dimension	Mean	Variance	Mean	Variance	t
15	Interaction	2.00	.75	3.56	1.19	4.53
19	Feedback	2.37	1.58	3.68	1.16	3.16
32	Feedback	3.42	2.26	4.46	.55	2.32
43	Personal Readiness	3.05	1.31	4.50	.67	4.18
45	General Satisfaction	3.76	.86	4.37	.91	2.05

During both semesters, students were satisfied with the instructor's preparation for the distance learning environment. Survey items addressed instructor flexibility to meet individual needs, the value of on-campus meetings, clarity of course expectations, and willingness of the instructor to meet personally with students. Although not statistically significant, spring semester students expressed greater satisfaction with the on-campus meetings than did fall semester students. On-campus meetings were designed to assist students in developing those competencies requisite to successful distance learning, but within the context of health education. A summary of the content of these meetings was posted to the course web page, allowing students the opportunity to experience it multiple

times, at their convenience, and to spend more time on content difficult to learn while avoiding repetition of material already mastered.

Within the dimension of interaction, item #15 also addressed the on-campus meetings. Spring semester students expressed a desire for more on-campus meetings, suggesting that although telecommunication technologies adequately facilitated both student-student and student-instructor interaction, the social aspect of learning held importance. This is in conflict with a report by May (1993) that found that interaction was not a primary concern of female distance learners.

Two items within the dimension of feedback were statistically significant: (a) students used the telephone to contact the instructor and (b) the instructor returned calls promptly. The improvement in student satisfaction resulted from more efficient use of the voice-mail system. During the fall semester, students were encouraged to use email as the most effective medium for student-instructor communication. After recognizing that many students did not have convenient access to email, however, students were provided with the instructor's voice-mail and home phone number. Students were invited to call during the evening and on weekends for content-related questions. In most cases, students were able to speak personally with the instructor without the time delay created by the process of voicemail communication.

The dimension of self-responsibility for distance learning addressed the effectiveness of the telecourse orientation, the text-based *Student Guide to Telecourses*, cooperative learning, and self-directed research. Students became significantly more comfortable about asking their peers for assistance with coursework. Course assignments specifically required collaboration and the application of the problem-solving process. Instruction was designed to provide guided learning experiences, practice the skills, assessment, and transfer.

Satisfaction of spring telecourse students to the overall concept of distance learning was significantly higher than that of fall telecourse students. Exit interviews suggest that

this resulted from three factors: (a) relevancy of instruction, (b) options to access course information, and (c) alternative assessment.

Achievement. Course assignments and grading criteria were included in the course syllabus and were discussed at the first on-campus meeting. In addition to a traditional midterm and final examination to assess knowledge of course content, students were assigned eight tasks to demonstrate the acquisition of new knowledge and the application of higher-order thinking skills and to provide an accurate, multidimsional picture of academic achievement.

Written assignments were to be submitted by a specific date; however, students also had the option of improving work and resubmitting it at the end of the semester as part of a health education portfolio (Nelson, 1999) to demonstrate learning over time. Throughout the semester, students were encouraged to take responsibility for their own learning experience, by selecting and submitting work to demonstrate completion of course requirements.

The eight assignments consisted of: (a) a short autobiography identifying personal reasons for enrolling in the courses and determining content relevancy; (b) three health-related self-assessments, requiring inventory interpretation, attitude assessment, and development of an action plan for behavioral change; (c) a plan for the use of technology within the course to access course content, submit coursework, interact with classmates and instructor, and conduct research; (d) a collaborative assignment; (e) identification and analysis of, and a solution to, a real-world problem; (f) documentation of the process of goal achievement within the context of making a lifestyle change; and (g) a reflection on personal effort and achievement in the course.

Examination scores and collective GPA from the two semesters preceding practicum implementation were compared to examination scores and collective GPA of students receiving the instructional intervention. While not statistically significant, the trend in Figure 3 reveals an improvement in the collective GPA achieved by health

education students during the fall semester 1998 and Spring 1999. These findings suggest that provision of alternative options for assessment may enhance the quality of student work requiring higher-order cognitive skills, without adversely affecting information recall skills.

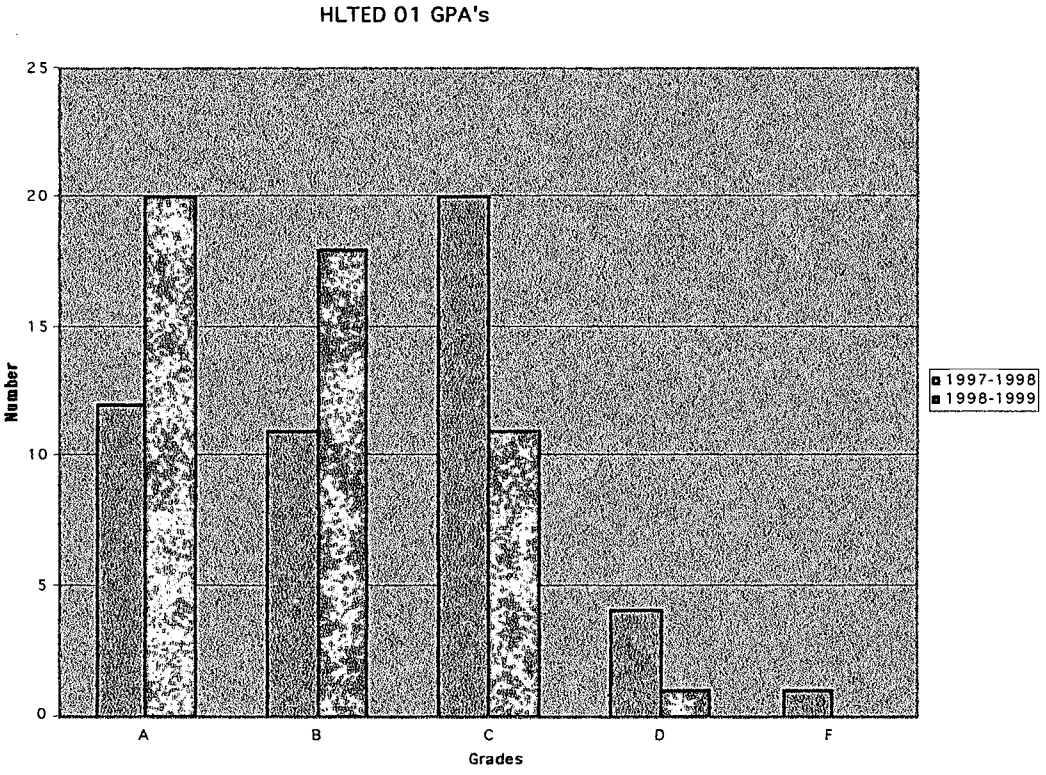

Figure 3. Comparison of collective GPA in HLTED 01 before and after the instructional intervention.

Recommendations

During the two-semester implementation phase of this practicum, retention in the HLTED telecourses was 29% (72 students enrolled, 21 completers) and 36% (64 students enrolled, 23 completers) respectively The findings of this report suggest that the following factors influence a student's decision to withdraw from a telecourse: (a) individual preparation for the distance environment, (b) utilization of multiple modalities for content delivery and interaction, and (c) instructional design. The problem of retention persists.

Of the students participating in this practicum, 64% believed they were able to succeed; they started the course, but then dropped out. The following recommendations are made to others who may want to improve student satisfaction, retention, and/or achievement in telecourses.

1. Prepare students for self-responsibility in the learning process. It appears that many telecourse students not only expect telecourses to be easier and less time consuming than traditional courses, but students also expect the traditional instructor-centered learning experience even though the telecourse environment and distance education are "non-traditional." Students must be taught the differences between distance classes and on-campus classes and be provided opportunity to practice and develop those skills requisite for successful distance learning. While many community colleges offer orientation sessions for distance learners, the content of these sessions is specific to each individual course. The writer recommends that distance students attend a general orientation to the process of distance learning addressing self-responsibility, active learning, and the development of skills that transfer to the workplace of the 21st century. Students should demonstrate basic competencies before entering the program and be encouraged to develop those competencies requiring higher order cognitive skills throughout the distance learning experience.

2. Enlist systemic support for the learning outcomes. To effectively achieve the proposed learning outcomes, all components within the institutional system must fulfill their designated roles. As students participate in technology-mediated courses, they must be continually challenged by all stakeholders to develop a sequence of skills that support learner autonomy and will be beneficial outside of the college setting, in the real world environment. These skills include effective communication, use of technology, problem-solving, collaborative work, research, and reflection. Management must provide incentives for faculty to develop learning-centered instructional strategies and alternative methods of assessment for both distance and on-campus classes. Counselors must fully understand

the distance learning process and competently prepare students for the geographic separateness. Representatives from Student Services should attend all three of the general orientation sessions ready to advise those students who choose not to continue with a distance education class. Faculty must be willing to adopt new teaching/learning paradigms and to reinforce the concept of learner independence. Students, too, must be willing to accept the challenge of becoming self-directed, independent learners.

3. Provide students with information on learning styles. Insights gleaned from learning style assessment can be used to help students construct meaningful knowledge about themselves and to assist faculty to design effective instruction. Both cognitive and affective preferences should be explored. Students should be encouraged to expand their style ranges; faculty should design instruction to support style expansion and to effectively meet the needs of diverse learning styles. There is insufficient data in this report to establish correlations between peer preference and telecourse completion and/or performance expectancy and telecourse completion but these relationships deserve further study.

4. Design instruction that teaches basic competencies, and provides guided practice, within the context of specific telecourses. New pedagogies must be implemented to ensure that students acquire the skills necessary to succeed in the dynamic world of the 21st century. The literature suggests that the same basic skills that are requisite for successful distance learning are also important for transition to the workplace. By practicing these competencies (in addition to content mastery) in each telecourse, students will develop and refine authentic learning. It is the responsibility of faculty to reinforce the development of these competencies in each telecourse.

5. Continue to schedule on-campus meetings for students preferring face-to-face interaction. Utilization of multiple modalities for information delivery and interaction accommodates learning style diversity, varying degrees of learner autonomy, and both affective and experiential differences with instructional technology. More instructor-dependent learners will tend to ask questions directly to the instructor. The on-campus

meetings provide an intermediate stage of structure between face-to-face learning and technology-mediated instruction for students experiencing difficulty adapting to transactional distance.

6. Use the medium of educational television to teach computer literacy. For most telecourse students, coming to campus on a regular schedule is difficult. Television, as a medium for content delivery, is simple and available. It is a first step in the transition from the traditional, on-campus lecture format to a progressive inclusion of technologies as media for content delivery and interaction. Offering a computer literacy telecourse each semester would provide prospective distance students the opportunity to develop basic technology skills that would seamlessly transfer to an online learning environment.

7. Course support web pages should be simple. To accommodate both affectual and experiential differences with instructional technology, the interface of the web page should be simple and contain only the features that are used in a specific course. Exit interviews revealed that even password access discouraged students from using the web page as a support tool. The web page interface should be consistent for all telecourses.

8. Employ tele-mentors to initiate telephone contact. It was intended that the instructor would initiate telephone contact with students failing to submit coursework at critical times during the first part of the semester. This time-demanding task was not realized. The writer believes that telephone contact is important for some students. The task, however, could be assumed by peer tele-mentors with previous telecourse experience. Tele-mentors could also solicit input from distance learners to determine changing needs and student service effectiveness.

9. Employ alternative methods to assess student learning. If a more macro view of what society expects from the "educated" learner is considered, then traditional examinations that assess content mastery must be supplemented, if not replaced, by authentic assessment. The academic portfolio is one alternative. The academic portfolio is an organized, purposeful collection of work that shows evidence of effort, progress, and

achievement over time. It encourages students to take responsibility for their learning experience and accommodates open entry/open exit enrollment.

Dissemination

Dissemination plans include a series of oral presentations to various groups within the writer's educational institution: (a) President's Council, (b) academic deans, (c) faculty senate, (d) department chairs, and (e) distance learning faculty.

At the District level, a written report will be sent to the District Chancellor and an oral presentation will be made to the District Academic Senate and to the Board of Trustees.

At the state level, a presentation will be made during the fall session of the [Northern California] Consortium for Distance Learning.

The writer has already submitted two articles for publication. The first, entitled *Open entry, open exit through portfolio assessment,* appeared in the Spring/Summer 1999 issue of Agenda, the PBS Adult Learning Service magazine. *An orientation to technology-mediated instruction: Utilization of multiple modalities for content delivery* has been submitted to The International Journal of Continuing Engineering Education and Life-Long Learning. It is a journal initiated by UNESCO and edited by Piet Kommers. A third article discussing the relationship of learning style to telecourses achievement will be published in Agenda in 2000.

Finally, results of this practicum will be disseminated at the annual Telelearning Conference, sponsored by PBS/ALS, in October, 2001.

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APPENDIX A

TELECOURSE READINESS QUESTIONNAIRE

Note: The following questionnaire was administered to all telecourse students during the fall semester 1998.

TELECOURSE READINESS QUESTIONNAIRE

ARE TELECOURSES FOR YOU?
Telecourses are not for everyone. This questionnaire will help you assess your chances for success. Take a few minutes to find out if they will work for you. Please mark your answers on the scantron sheet provided.

1) My need to take this course now is:
   a) High--I need it immediately for a specific goal.
   b) Moderate--I could take it on campus later or substitute another course.
   c) Low--it could be postponed.

2) Feeling that I am part of the class is:
   a) Not particularly necessary to me.
   b) Somewhat important to me.
   c) Very important to me.

3) I would classify myself as someone who:
   a) Often gets things done ahead of time.
   b) Needs reminding to get things done on time.
   c) Puts things off until the last minute or doesn't complete them.

4) Classroom discussion is:
   a) Rarely helpful to me.
   b) Sometimes helpful to me.
   c) Almost always helpful to me.

5) When an instructor hands out directions for an assignment, I prefer:
   a) Figuring out the instructions myself.
   b) Trying to follow the directions on my own, then asking for help as needed.
   c) Having the instructions explained to me.

6) I need instructor comments on my assignments (so I know how I am doing):
   a) Within a few weeks, so I can review what I did.
   b) Within a few days, or I forget what I did.
   c) Right away, or I get very frustrated.

7) Considering my professional and personal schedule, the amount of time I have to work on a telecourse is:
   a) More than for an on-campus course.
   b) The same as for a class on campus.
   c) Less than for a class on campus.

8) As a reader, I would classify myself as:
   a) Good--I don't need help to understand the textbook.
   b) Average--I sometimes need help to understand the textbook.
   c) Slower than average--I find it difficult to learn by reading the textbook.

9) Coming to campus on a regular schedule is:
   a) Extremely difficult for me--I have commitments (work, family, or personal) during times when classes are offered.
   b) A little difficult--but I can rearrange my schedule to allow for regular attendance on campus.
   c) Easy for me.

10) When I need help understanding the subject:
   a) I am comfortable approaching the instructor to ask for clarification.
   b) I am uncomfortable approaching the instructor, but do it anyway.
   c) I never approach the instructor to admit that I don't understand something.

Note: Adapted from Loser, B., Trabandit, J., Hatheway, B., & Donnell, T. (1994, Spring). Are telecourses for you? Agenda, with permission of the publisher.

APPENDIX B

TELECOURSE READINESS QUESTIONNAIRE (REVISED)

Note: An additional 10 multiple-choice items were added to the original Telecourse Readiness Questionnaire to solicit information pertaining to learning style and learner autonomy. This revised questionnaire was administered to all telecourse students during spring semester 1999.

TELECOURSE READINESS QUESTIONNAIRE (revised)

ARE TELECOURSES FOR YOU?
Telecourses are not for everyone. This questionnaire will help you assess your chances for success. Take a few minutes to find out if they will work for you. Please mark your answers on the scantron sheet provided.

1) My need to take this course now is:
   a) High--I need it immediately for a specific goal.
   b) Moderate--I could take it on campus later or substitute another course.
   c) Low--it could be postponed.

2) Feeling that I am part of the class is:
   a) Not particularly necessary to me.
   b) Somewhat important to me.
   c) Very important to me.

3) I would classify myself as someone who:
   a) Often gets things done ahead of time.
   b) Needs reminding to get things done on time.
   c) Puts things off until the last minute or doesn't complete them.

4) Classroom discussion is:
   a) Rarely helpful to me.
   b) Sometimes helpful to me.
   c) Almost always helpful to me.

5) When an instructor hands out directions for an assignment, I prefer:
   a) Figuring out the instructions myself.
   b) Trying to follow the directions on my own, then asking for help as needed.
   c) Having the instructions explained to me.

6) I need instructor comments on my assignments (so I know how I am doing):
   a) Within a few weeks, so I can review what I did.
   b) Within a few days, or I forget what I did.
   c) Right away, or I get very frustrated.

7) Considering my professional and personal schedule, the amount of time I have to work on a telecourse is:
   a) More than for an on-campus course.
   b) The same as for a class on campus.
   c) Less than for a class on campus.

8) As a reader, I would classify myself as:
   a) Good--I don't need help to understand the textbook.
   b) Average--I sometimes need help to understand the textbook.
   c) Slower than average--I find it difficult to learn by reading the textbook.

9) Coming to campus on a regular schedule is:
   a) Extremely difficult for me--I have commitments (work, family, or personal) during times when classes are offered.
   b) A little difficult--but I can rearrange my schedule to allow for regular attendance on campus.
   c) Easy for me.

10) When I need help understanding the subject:
   a) I am comfortable approaching the instructor to ask for clarification.
   b) I am uncomfortable approaching the instructor, but do it anyway.
   c) I never approach the instructor to admit that I don't understand something.

11) When I enroll in a course:
   a) I know what I need to learn.
   b) I like to explore interesting things even if I won't be tested on them.
   c) I expect my instructor to tell me what I need to learn.

12) When learning new information:
   a) I like to read about it in the textbook.
   b) I like to look at videos, slides, graphs, charts.
   c) I like lectures and class discussions.

13) When I have a question, I prefer to:
   a) Search for the answer myself.
   b) Ask for help from one of my classmates.
   c) Ask my instructor for the answer.

14) As a writer, I consider myself:
   a) Good--my writing is organized and grammatically correct.
   b) Average--I have some difficulty expressing myself and tend to make some grammar and spelling errors.
   c) Poor--writing papers is a struggle for me.

15) In my telecourses, I expect to perform:
   a) Better than average.
   b) Average.
   c) Below average.

16) I have completed _____ telecourses:
   a) None (this is my first one).
   b) 1 - 2.
   c) 3 or more.

17) In college classes, I would prefer to learn material that:
   a) Will help me succeed in the workplace.
   b) I am interested in.
   c) I know I will be tested on.

18) In my college coursework, I generally:
   a) Get most information from the textbook.
   b) Go to the library to learn more about a topic.
   c) Use the internet to learn more about a topic.

19) I have access to a computer:
   a) At home.
   b) At work.
   c) I do not have access to a computer.

20) I have access to the internet:
   a) At home.
   b) At work.
   c) I do not have access to the internet.

APPENDIX C

TELECOURSE EVALUATION

TELECOURSE EVALUATION

To assist us to improve your telecourse experience, please complete the following questionnaire. You may return it to your instructor or mail it to the Coordinator of Distance Learning.

1. What is your primary reason for enrolling in this telecourse?
   a) Degree Requirement _____
   b) Elective _____
   c) Develop job skills _____
   d) Convenience _____
   e) Personal Enrichment _____

2. What is your total course load this semester (the number of hours for which you are enrolled)? _____

3. How many on-campus courses (not telecourses) have you taken at any of the District colleges? _____

4. How many telecourses are you taking this semester? _____

5. How many telecourses have you taken previously (not counting those in which you are currently enrolled)? _____

6. How did you most frequently view the telecourses?

   a) Cable channel _____
   b) Broadcast channel _____
   c) College Media Center _____
   d) Rental videotapes _____
   e) Other _____

For the following items, please circle the appropriate number:
Strongly Agree Strongly Disagree
"5"----------"4"----------"3"----------"2"----------"1"

---

7. The technical quality of the video programs (picture clear, sound clear, etc.) was good. [5 4 3 2 1]

8. The quality of the subject matter presented in the videos was good (well organized, clearly presented, thoroughly discussed, etc.).	[5 4 3 2 1]
9. The textbook was useful (related well to the video programs, related well to the study guide, contained important information, etc.)	[5 4 3 2 1]
10. The study guide was useful (contained helpful exercises, related well to the videos and the textbook).	[5 4 3 2 1]
11. The course syllabus was useful (it described the course and contained all the information I needed to participate in the class).	[5 4 3 2 1]
12. The time at which the videos were broadcast on Cable or Broadcast TV were convenient for me.	[5 4 3 2 1]
13. I used "Replay on Request".	[5 4 3 2 1]
14. The number of on-campus meetings was sufficient.	[5 4 3 2 1]
15. I would like more on-campus class meetings.	[5 4 3 2 1]
16. The on-campus meetings were scheduled at times that were convenient for me.	[5 4 3 2 1]
17. The instructor was flexible and tried to accommodate my personal schedule.	[5 4 3 2 1]
18. The content of the on-campus meeting was good.	[5 4 3 2 1]
19. I used voicemail to talk with my instructor and obtain course information.	[5 4 3 2 1]
20. The videos in the College Media Center were available to me when I needed them.	[5 4 3 2 1]
21. The College staff were helpful to me.	[5 4 3 2 1]
22. I found the telecourse to be of a higher quality than on-campus classes I have taken.	[5 4 3 2 1]

23. I found this telecourse to be of a higher quality than other telecourses I have taken. [5 4 3 2 1]

24. I am more likely to take another *telecourse* as a result of my experience in this telecourse. [5 4 3 2 1]

25. I am ore likely to take another *on-campus* course at this college as a result of my experience in this telecourse. [5 4 3 2 1]

26. The telecourse was well organized. [5 4 3 2 1]

27. The assignments were useful. [5 4 3 2 1]

28. The exams were well related to the content that I was expected to study and learn. [5 4 3 2 1]

29. The instructor explained the course requirements. [5 4 3 2 1]

30. The instructor explained the grading policy. [5 4 3 2 1]

31. The instructor was prepared for the on-campus meetings. [5 4 3 2 1]

32. The instructor returned my phone calls promptly. [5 4 3 2 1]

33. The instructor returned my assignments and tests promptly. [5 4 3 2 1]

34. The instructor was available to meet with me. [5 4 3 2 1]

35. The instructor stimulated my interest in the subject matter. [5 4 3 2 1]

36. The instructor stimulated my interest in learning. [5 4 3 2 1]

37. I would have taken this course even if it had NOT been offered as a *telecourse*. [5 4 3 2 1]

38. The *Student Guide to Telecourses* is clear in its explanation of the telecourse program. [5 4 3 2 1]

39. The general orientation session helped me to understand the importance of self-responsibility in the telecourse program. [5 4 3 2 1]

40. I used email to communicate with my instructor. [5 4 3 2 1]

41. I used email to communicate with other students in the class. [5 4 3 2 1]

42. I was able to discuss aspects of the course with my learning team. [5 4 3 2 1]

43. I felt comfortable asking other students for assistance with coursework. [5 4 3 2 1]

44. I used the College Library, or another college library, for my coursework. [5 4 3 2 1]

45. Generally speaking, I like the concept of distance learning. [5 4 3 2 1]

46. I have access to a computer and modem. [5 4 3 2 1]

47. If I knew that I could definitely continue my education via distance learning, I would purchase a computer and modem. [5 4 3 2 1]

48. Compared to a traditional on-campus class, my grade in a telecourse will probably be about the same. [5 4 3 2 1]

APPENDIX D

RUBRIC OF COMPETENCY STANDARDS

COMPETENCY SKILLS AND THE RUBRIC OF STANDARDS

The same basic skills that are requisite for successful distance learning are also important for transition to the workplace. By practicing these competencies (in addition to content mastery) in each telecourse, you develop and refine authentic learning. There are eight performances that telecourse students should be able to accomplish:

- content mastery
- transition to technology-mediated instruction
- use of technology tools
- communication skills
- problem-solving skills
- collaboration
- research
- reflection

On the following page, you will find a rubric of standards for these competencies. The rubric defines the *minimum* standards for "meets expectations" in each performance area. "Meets expectations" is comparable to a letter grade of C. Discuss these performance skills with your learning team and then define standards for the two other categories of "exceeds expectations" and "in progress".

If you refer to this rubric throughout the semester, and practice the competency skills each time you submit an assignment, your overall course performance will improve!

RUBRIC OF COMPETENCY STANDARDS

	Exceeds Expectations	Meets Expectations	In Progress
CONTENT MASTERY		Answers >70% of the questions on an objective-type test accurately.	
TRANSITION TO TMI		Completes, scores, interprets a learning style inventory; cites one implication for distance learning.	
TECHNOLOGY TOOLS		Feels comfortable with television, VCR, & email. Prepares written assignments on a word processor.	
COMMUNICATION SKILLS		Written assignments are well organized, grammatically correct, few errors in content. Uses peer editing.	
PROBLEM-SOLVING		Is able to formulate & apply the process of problem-solving to a real-world, health related problem.	
COLLABORATION		Shares ideas and materials with learning team. Finds answers to questions from team members. Tries to get others involved.	
RESEARCH		Accesses information from a variety of resources. Develops a reference list for written assignments.	
REFLECTION		Is able to evaluate personal performance in terms of self-responsibility and self-directed learning.	

APPENDIX E

INSTRUCTIONAL OBJECTIVES FOR THE TELECOURSE ORIENTATION

INSTRUCTIONAL OBJECTIVES: TELECOURSE ORIENTATION

The following eleven performance objectives describe what students should be able to do after attending the telecourse orientation. To assess the effectiveness of the telecourse orientation, please observe student behavior in your telecourse and briefly comment next to those objectives that you believe are NOT being achieved.
Please return your comments to me before midterm. Thank you.

1. TLW (the learner will) be able to use the *Student Guide to Telecourses* as a resource to find answers to questions pertaining to the telecourse program.

2. TLW understand why it is possible to attend only two different telecourse meetings during a given orientation session.

3. TLW listen and write down the location of a maximum of two telecourse class meetings.

4. TLW arrive at these meetings promptly on the hour for the first one and on the half hour for the second one. (This means that faculty must plan on staying "on location" until the second group arrives at ?:30.)

5. TLW locate specific course information in the course syllabus (either the print version or the online version).

6. TLW (after C1) consult with instructor before dropping out of a telecourse.

7. TLW seek answers to questions from classmates before asking the instructor.

8. TLW utilize peer editing before submitting assignments to instructors.

9. TLW determine a personal plan to use technology for content retrieval, submission of assignments, and interaction with classmates and instructor.

10. TLW describe the procedure for conflict resolution/problem-solving.

11. TLW describe the personal advantages and/or disadvantages of the competency skills development (the rubric of standards), interdisciplinary projects, and portfolio assessment.

APPENDIX F

MEMORANDUM: FREQUENTLY ASKED QUESTIONS

M E M O R A N D U M

DATE: August 17, 1998

TO: All concerned

FROM: Lin Nelson

RE: Policy on "adding" telecourses

FAQ's about "adding" telecourses

THE QUESTION: "I MISSED ORIENTATION, HOW DO I ADD A TELECOURSE?"

THE ANSWER: "I'm really sorry, but the college policy is that you must attend at least one orientation session. For your convenience, the Office of Distance Learning has scheduled these sessions almost two weeks after the start of the semester, and, has scheduled them during the day, during the evening, and on a Saturday. If you cannot personally attend, all we ask is that you have a family member or a friend attend for you. Without your personal commitment to attend the orientation (which, by the way, lasts two hours) it is very difficult to succeed in a distance education course. I can suggest two possible options: (1) consider a traditional, on-campus class or (2) consider the portfolio option (p.6 Student Guide to Telecourses). You can begin working on class assignments now but officially enroll in the course next semester.

THE REASON:

In both the Class Schedule and the Student Guide to Telecourses it states that "Attendance at one orientation is mandatory for all telecourse students. If you are taking more than one telecourse, plan to attend two or more orientations." To demonstrate our flexibility to accommodate students we have added: "If you absolutely cannot attend the orientation, please make arrangements for a family member or a friend to attend for you and to complete the [above mentioned] tasks."

It is during this orientation that students have the opportunity to meet their instructor and their classmates, to form learning teams,

and to learn how to develop special skills that are necessary to be a successful distance learner. As a student, it's your responsibility to be fully prepared for this non-traditional educational experience.

Telecourse orientations are scheduled to begin during the last part of the second week of the semester. The last orientation session is on the last day to add a class. PCTV schedules the cablecast of programs based on the last official day to add a class. KCSM has adjusted their broadcast schedule to correspond to our last day to add a class.

THE QUESTION: " I've left messages and my instructor never returns them."

THE ANSWER: "Did you attend an orientation? Well, then, have you called each of your learning team members? If so, please be patient, your instructor will return

your call within 48 hours. If you have access to a computer, I suggest that you send an e-mail message. (You can use my computer, if you wish.)."

THE QUESTION: "Where do I find my instructor?"

THE ANSWER: Because most telecourse instructors are part-time, personal appointments must be scheduled in advance. Please send an email message or leave a voicemail message. Your message will be returned within 48 hours.

ORIENTATION DATES
WEDNESDAY SEPTEMBER 2, NOON-2PM
THURSDAY, SEPTEMBER 3, 6PM-8PM
SATURDAY, SEPTEMBER 5, 1PM-3PM in the Forum

CE019195

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(over)