The purpose of this qualitative study was to describe and communicate a student-constructed model of student services for electronic distance education (EDE). This study seeks to answer the following questions:

- Do students enrolled in EDE perceive a need for student services? If not, why not?
- Which services do students want/need?
- How do students want the services delivered?
- If students constructed a model of student services for EDE, what would it look like?

A phenomenological approach was used. Qualitative data were collected through interviews with ten students, a document review, a survey of computer competency, and follow-up e-mail. Data were analyzed and systematically compared through constant comparative analysis and an inductive grounded theory approach was taken.

One predominant finding that emerged from the conversations with the co-researchers was that of access for all students, particularly accommodations for those with special needs. Participants identified a number of services as basic to the EDE
experience. They categorized services into three levels, expressing the expectation that services would evolve over time and technology. At each level a theme emerged that characterized the co-researchers’ expectations and perceptions of student support services for EDE: access, interaction, and independence.

The intent of level one was to provide entry to the college services and curriculum; access was used to define this level. The second level expressed the concern that students have the opportunity to interact with and be engaged by the services and the technology: interaction. The third level emphasized the need for information and services to promote independence, exploration, and autonomy in using electronic student services as well as to have available an “expert” for specific questions that are not easily or quickly answered by the services online. This level emphasized the use of real time transactions.

The study concluded that students participating in EDE perceive a need for student services via distance. Participants further suggested that services provided to EDE must be equal and of the same quality as those traditionally delivered.

Using the three levels that emerged from conversations with co-researchers – access, interaction, and independence – the researcher further classified the services into a model of student services using categories put forth by Namm and Holly (2000).

INDEX KEYWORDS: Community Colleges, Distance Education, Distance Learning, Electronic Distance Education, Electronic Distance Learning, Student Services, Support Services, Two-year Colleges.
TOWARD A STUDENT-CONSTRUCTED MODEL OF STUDENT SERVICES
FOR ELECTRONIC DISTANCE EDUCATION

by
Joanna F. Blount

A DISSERTATION
submitted to
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I understand that my dissertation will become part of the permanent collection of Oregon State University libraries. My signature below authorizes release of my dissertation to any reader upon request.

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Joanna F. Blount, Author
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effectively and confidentially, that it would effect change, and their tenacity in face of adversity is respected and much appreciated.
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CHAPTER I

INTRODUCTION TO THE STUDY

Distance education is an increasingly important component of higher education as increasing numbers of students are enrolling in distance learning courses (Dalhousie University, 1995; NCES, 1998; Salomon, 1999, p. 52). *Linking for Learning: A New Course for Education* (U.S. Office of Technology Assessment, 1999) reported that prior to 1988 fewer than ten states were involved in distance education. In 1995, one-third of the institutions offered distance education courses; one-fourth planned to offer such courses within the next three years; and 42 percent did not plan to offer such courses (NCES, 1998). Currently 62 percent of public two-year colleges offer distance learning (Johnstone, 2000).

Johnstone (2000) reported there was a 33 percent increase in the number of institutions offering distance learning, and the number of courses and enrollments doubled between 1995 and 1998. Nearly 1200 degree programs and more than 300 certificates are offered via distance learning. In a three-year period, there has been a 38 percent increase in the number of programs using electronically delivered instruction and a 32 percent increase in Internet-delivered coursework (Johnstone, 2000). Total enrollment in distance education courses at post-secondary degree-granting institutions doubled between 1995 and 1998, from 754,000 to 1.6 million (NCES, 1998).
A number of factors have influenced the growth of electronic distance education (EDE), including rising political pressure to provide greater access to higher education, increasing competition by new educational enterprises, burgeoning economic forces, growing technological advances, and responding to the needs of a growing population of learners (Jackson, 2000). Bascom and Sherrit (1999) cited that increased demands for education and decreased resources available have required using the technology more efficiently, increasing access through technology, and sharing resources. "As increasing number [sic] of working adult students seek access to higher education, they will demand more time- and place-independent learning options and technology based institutional support services" (King, 1995, p. 5). The converging forces of increased employer demands, increased student demands (King, 1995), technological advances, increased public funding (Carr, 2000a), and increased accountability are producing an extremely competitive environment (Zeiss, 1998) that is driving EDE.

Tuller and Oblinger (1998, p. 9) note that "history demonstrates that fundamental technological change ultimately begets significant structural change, regardless of whether participants choose to join or resist the movement." Boettcher (1997, p. 2) reinforces the transformative nature of technology in education, saying that it will "change the academic landscape." As a result, distance education is rapidly expanding because of the use of digital technologies. The history of distance education parallels the development of technology, since distance learning has always relied upon technology (CLHE, 1999).
Changes in the types of technologies available for delivering distance education, including transformation of networking technology and the rise of the Internet, have played a role in the adoption of distance education by post-secondary institutions. The largest growing segment of distance learning is that of electronically delivered coursework, that is, Internet based technologies (NCES, 1999).

The new technologies have made distance education courses more convenient and better suited to the needs of varying student populations. Distance education is reaching wider audiences comprising all segments of the population. The post-secondary audience is increasing at the fastest pace because of distance education’s responsiveness to the needs of an older, nontraditional student population.

Presently, little attention is given to the support required by students to be successful in EDE. Moore (2000) suggests that “student services is a key but often neglected component of student success.” Comprehensive online education extends well beyond putting courses or academic programs online. As more students study online colleges have a responsibility to offer a full range of equivalent services to online students as are offered to on campus students (California Virtual Campus, 2000a).

Student services represent the front edge of open access, fundamental to community colleges. The equality and availability of these services serve as the foundation for each student’s success and substantially influences the student’s view of what follows. The coupling of online student services with quality instruction improves access for students and fosters their success. (Roe Darnell, May 2000)

Currently, 16 percent of post-secondary institutions require distance learners to register on campus; 31 percent provide no off-campus library service; and 73
percent provide no social support network (Jackson, 2000). Thirty-one percent of post-secondary institutions have no strategy of intervention for those experiencing academic difficulty; 48 percent provide no personal counseling service; and 37 percent rely on faculty for technical support (Krauth, 1998). Putting student services online provides increased access for all students (Online Student Services Conference, 2000).

Community colleges strive to address the growing needs of students by making available support services without a model of what service components would be of most benefit to students. While “there is not single best model of distance learning” (U.S. Office of Technology Assessment, 1999, p. 11) or student services, it is important for administrative decision-makers, instructional designers, faculty, and students to understand that EDE appears to be effective (Egan, Welch, Page & Sebastian, 1992), but students require support services even when at a distance (Darnell, 2000; Jackson, 2000; Johnstone, 2000).

Definition of Terms

Moore (1972, p. 76) defined distance education as the teaching-learning relationships characterized by separation between learners and teachers “so that communication between learner and teacher must be facilitated by print, electronic, mechanical, or other devices.” This is a modification of Keegan’s (1996) scholarly definition: “the separation of the teaching acts in time and place from the learning acts.” Another definition is provided by Mugridge (1991) who states it is a “form of education in which there is normally a separation between teacher and learner and thus one in which other means – the printed and written word, the telephone, the computer conferencing or teleconferencing – are used to bridge the physical gap.” The
Instructional Telecommunications Council (ITC) provides a more recent and expanded definition:

...the process of extending learning, or delivering instruction resource-sharing opportunities, to locations, away from a classroom, building, or site, to another classroom, building or site by using video, audio, computer, multimedia communications, or some combination of these with other traditional delivery methods. (Dalziel, 2000).

These definitions all have two items in common: separation of teacher and learner and the use of some medium to exchange knowledge. Given the technological advances that have occurred recently, distance education is taking place through the use of personal computers utilizing such innovative strategies as the Internet and the World Wide Web. Technology driven learning, therefore, has many names. These include “modem instruction,” “online education,” “Web-based learning,” “Internet courses,” “virtual learning,” “computer-mediated communication (CMC),” “distributed learning,” “telelearning and connected learning,” and “e-learning” to name a few.

“EDE [electronic distance education]” is the term used to define any online or modem instructed delivery method characterized by the separation of learner and teacher for the purpose of this study

Statement of the Question

An increasing number of students are taking advantage of learning and training opportunities from their homes and work sites via EDE formats. As institutions have initiated EDE, the first priority has typically been to establish the academic courses and programs (Kendall, Moore, & Smith, 2001). As more students use distance education as the alternative method to traditional classroom learning, the need for
infrastructure grows. Not only does this mean expanding the technology to support this method of learning but also providing the services that are necessary to help students be successful and effective as learners. Support services vary by student needs and expectations, but it is expected that there are core services that would be beneficial to all distance learners, as well as many traditional on-campus students. Johnstone (1991) argues it is known that students want all the “obvious traditional school services, such as a library and advisement.”

Historically, student development practitioners have been responsible for assessing, planning, and implementing services, programs, advocacy efforts that extend the educational opportunities and experiences of college students. Professional associations, accrediting agencies, and institutions are attempting to address the issues surrounding support services for distance learners. There has been a delayed reaction in implementation of support services for distance learners.

Purpose and Research Questions

The purpose of this study is to describe and communicate a student-constructed model of student services for EDE. The following questions will guide the design of the study:

- Do students enrolled in EDE perceive a need for student support services? If not, why not?
- Which services do students want/need for EDE?
- How do students want the services delivered?
- If students constructed a model of student services for EDE, what would it look like?
Table 1 summarizes research questions, data needed, data sources, methods to gather data, justification, and process for analysis.

Relevance of the Study

Given the significant increase in the numbers of students using EDE and the numbers of courses delivered through community colleges via EDE, it is relevant to identify, describe, and communicate students' expectations of support services for EDE. From this research and current literature the researcher will propose a model of student services that will serve as core support services for students enrolled in EDE.

The National Education Association (NEA) (1999) indicated distance education research does not include a theoretical or conceptual framework. Consequently, there is a need to develop a more integrated, coherent, and sophisticated program of research that is based on theoretical perspectives to frame understanding, design, and use of online systems and to contribute to new developments in the field (Harasim, 1990). A theory has emerged from the conversations with co-researchers of this study and has aided in development of a model of student services for EDE.

There is no question that an impressive amount of writing concludes that distance education is a viable and effective alternative to traditional classroom delivery (NEA, 1999). However, one motivation for this study rests on key shortcomings of this research. A large amount of the research conducted on EDE has focused on the instructor and the need for additional training in the use of technology to effectively
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use this delivery method (Rowe, 1999). Other research discusses the need for determining compensation to faculty for utilizing this delivery method (Holmes, 1999).

Conversely, research that is focused on students has examined the effectiveness of EDE through student outcomes, students' attitudes about learning through EDE, and overall student satisfaction with EDE (CLHE, 1999). Limited research was found on student services for EDE and none on a model of student services for EDE. This study contributes to the current body of knowledge regarding student services and EDE and, more specifically, moves toward a student-constructed model of student services.

A final motivation for this study focuses on decision-making regarding distance education and student services in community colleges: "Decisions concerning distance learning are often made in the absence of empirical data" (Richardson, 1999, p. 6). Consequently, this research will have direct application for the decision-makers and practitioners in community colleges when developing infrastructure to provide support services in EDE.

Overview of Research Methodology

A phenomenological approach was used to answer the research questions. According to Patton (1990, p. 88), phenomenological inquiry focuses on the question: "What is the essence and structure of the experience of this phenomenon for these people?" Meaning is the essential concern of this qualitative method. Phenomenological approach does not offer the possibility of effective theory to explain the world (van Manen, 1990).
The grounded theory perspective reflects a naturalistic approach to interpretation, stressing naturalistic observations, open-ended interviewing, the sensitizing use of concepts, and a grounded (inductive) approach to theorizing (Denzin & Lincoln, 1998). The result of this type of qualitative research is a theory that is "grounded" in the data (Merriam, 1998, p. 17). Grounded theory uses "specific, everyday-world situations" (Merriam, 1998, p. 17) and has a usefulness to practice that may be lacking in grand theories.

Ten students enrolled in EDE participated in a comprehensive interview; the interview guide approach was used to collect data. Broad topics were specified in advance, but the wording and sequence of questions was decided based on input from the participants. The interviews were transcribed, analyzed, and coded according to themes (assigned words or phrases that represented recurring topics identified from the data) within the research questions. Field notes supplemented the primary data source. Demographic data were captured through an electronically delivered survey. Finally, the researcher reviewed documents pertaining to student records, along with course outlines and syllabi.

A constant comparative method of data analysis was employed as a means of developing grounded theory. The focus of analysis was not merely on collecting large amounts of data but in organizing and arranging the ideas that emerged from the data (Strauss, 1987).

Assumptions of the Study

Several assumptions underlie the conceptualization, implementation, and analysis of this study:
• This study assumed that student support services are a key component of the student experience in EDE.

• This study assumed that participants, assured of confidentiality, would participate willingly and that their comments would be complete and accurate.

• The study assumed that the researcher’s experience in EDE added a dimension of richness to the data and analysis.

• This study assumed that a phenomenological approach and grounded theory were best suited for describing and communicating a student-constructed model of student services for EDE.

Parameters of the Study

The following parameters are identified:

• The study focused on a single site and was limited to a sample of students currently enrolled in an EDE course at a community college in Oregon; therefore, the judgement of transferability of the study’s findings must rest with the reader.

• The researcher regards the EDE experience as a positive technological manifestation, providing access to place- and time-bound students.

• This study was conducted by a single researcher and limited by that researcher’s perceptions and interpretations. To ensure trustworthiness, two panels of experts were surveyed including a panel of distance educators and a second panel of student services experts.
- The study was not intended to assess or evaluate the student services component of EDE at one community college but rather to describe, characterize, and communicate the students' experiences in EDE.

Chapter Summary

The study is presented in five chapters providing an in-depth examination of student expectations of student support services in the EDE experience. Chapter One presents an introduction to the topic: student support services for EDE. It provides a brief history of distance education and student services, the purpose of the study, the research questions, and the relevance of the study. EDE is defined; assumptions regarding the study are delineated; and parameters of the study are described.

The second chapter reviews the literature that serves as the background and general context for the study. This literature review is divided into three sections: student services, EDE, and pedagogy. Chapter Three describes the methodology for the research. It documents the methods and design for the collection and analysis of the data. Chapter Four presents and discusses the results of the research. Findings indicated that students participating in EDE perceive a need for student services via distance. Participants suggested that services provided to EDE must be equal and of the same quality as those traditionally delivered. The final chapter reviews the findings and their implications for future research and practice. This chapter addresses the dilemma that confronts student services professionals when faced with honoring the voices of the students amid practical considerations of limited budgets, inadequate technology, and too few human resources. The study concludes with
recommendations for future practice, possible questions for further research, and a discussion of the limitations of the study.
CHAPTER II

REVIEW OF THE LITERATURE

Research studies in distance education did not appear until after World War II, with monographs and bibliographies first appearing in the 1960's (Holmberg, 1987). Over the past 60 years, research in distance education has evolved slowly, limited to studies designed to answer immediate, practical questions and to evaluations of distance education programs and courses (Clow, 1998; Feasley, 1991). Most previous studies of distance education focused on faculty perceptions of teaching effectiveness (Kendall & Oaks, 1992) and the quality of instruction or pedagogical concerns (Clow, 1998).

Distance learners have been studied for their success or failure, high attrition rates, motivation, and learning styles (Clow, 1998). Researchers have investigated demographic correlates to student success (Souder, 1993), satisfaction (Biner, Dean, & Mellinger, 1994), and completion of distance coursework (Dille & Mezek, 1991). In general, the research on distance education has been largely anecdotal, has been dominated by comparison studies, and has involved non-traditional students (Clow, 1998). An additional study by Zvacek (1991) cautioned distance educators to consider the affective domain in designing education experiences.

Recent research in student services has focused on evaluations of single-site departments; practical issues of developing and implementing student services programs for individual colleges; and effectiveness of specific programs such as advisement, touch-tone and Web-based registration, and residential hall programming.
While these research studies have practical application to the workplace, they lack transferability to other situations and locations.

Guided by the assumptions that "EDE is a complex system of interactive and interdependent factors" (Baker, 1997, p. 21) and that "student services is a key component of student success" (Moore, 2000), three themes that have significant impact on students' experiences in EDE have been determined. These include student services, EDE, and pedagogy. Thus, the literature review is organized to emphasize the importance of student services to EDE, alternative delivery methods in education and the technological advances that have impacted education, and pedagogical concerns ever present in EDE.

STUDENT SERVICES

In the beginning was the term in loco parentis. This term signified that, by acting in place of the parent, the staff of the early American colleges was expected to carry out the holistic approach to education inherited from the English residential university system of the 17th century. (Dellworth & Hanson, 1989, p. 56)

History of Student Services

Dellworth and Hanson (1989) suggest this approach [in loco parentis] emphasized the intellectual, social, moral, spiritual development of the young man entrusted to the care of the college. American colleges followed this traditional format, ignoring the German school of thought that placed emphasis on intellectualism. However, after the Civil War, resistance to the German concept of a college education dissolved. Leading institutions began to embrace the new emphasis, turning away from paternalism. Thus "student services emerged and evolved by default" (Dellworth
& Hanson, 1989, p. 5), by taking over necessary and sometimes unpopular tasks abandoned by trustees, administrators, and faculty.

“The collegiate way is the notion that a curriculum, a library and a faculty and students are not enough to make a college. It is an adherence to the residential scheme of things. It is respectful of the quiet rural setting, dependent on dormitories, committed to dining halls, permeated by paternalism” (Rudolph, 1962, p. 37). The religiously-oriented college provided a setting in which student services, although not yet differentiated and professionalized, were at their zenith in the functional sense – in the sense that they involved all participants in the college and were inseparable from the academic programming (Dellworth & Hanson, 1989).

Historically the participation of faculty in student services gradually changed from total involvement to detachment. The development of student character and values was originally a central part of the faculty role. “In many instances the professor was expected to indoctrinate his students with particular articles of religious belief, according to the prevailing conviction, that would foster their development as total persons. With the passage of time, indoctrination in the narrower sense gave way to a general function of personal counseling and the inculcation of high moral standards” (Knapp, 1969, p. 292). American higher education, on the other hand, came to embrace, among other characteristics of the German research university, the concept that students should be free of administrative or faculty supervision of academic and social affairs (Dellworth & Hanson, 1989).

The first professional responsibility readily identifiable as student services constituted the “watchdog” role of the matrons who safeguarded the females enrolled
in the first coed college of the mid-19th century. The prototypes of deans of women were likewise established in the 19th century to mitigate "the terrible dangers inherent in coeducation" (Dellworth & Hanson, 1989, p. 7). Harvard University claims the first dean in 1870. He was a personnel administrator who "gave his attention to discipline and routine mechanics of enrollment, in addition to teaching" (Dellworth & Hanson, 1989, p. 17).

In the following decades, disciplinary duties were assumed by specially designated college staff. By the last decades of the 19th century several specialized student services were in place, including health and medical services, spiritual guidance provided by campus ministers, and those functions related to student matriculation (advising, admissions, and student records). "The proliferation of administrators …[resulted in] first a secretary for the faculty, then a registrar, then a vice president, a dean, a dean of women, a chief business officer, assistant dean, a dean of men, a director of admissions" (Dellworth & Hanson, 1989). During the 20th century, guidance and counseling, residence hall supervisors, career placement were added. Psychological and aptitude testing appeared on the campus in the aftermath of large-scale testing for the armed services. All existed primarily to "free research minded scholars from the detailed but necessary work that went into management of an organized institution" (Rudolph, 1962, p. 472). Thus, student services were separated from academics, were professionalized, and became part of the administration. Nuss (1996, p. 39) suggested that "two concepts define the profession: the development of the whole person and the fact that student affairs was established to support the academic mission of the institutions of higher education."
Theoretical Framework of Student Services

Organizing and ordering ideas into theory allows practitioners to accomplish several important tasks. Theory helps to organize data to better explain what student services professionals do; aids in everyday decision-making; and helps to plan, develop, and implement for the future (Dellworth & Hanson, 1989). Like higher education, student affairs in colleges is also derived from three major historical paradigms: in loco parentis, student services, and student development. The goal of in loco parentis was to teach students to control their sinful nature and behave according to prescribed moral values. “Student services” is the name given to a model in which social and behavioral sciences are used to help troubled students via remedial services and to provide other services and programs students want as consumers (Dellworth & Hanson, 1989). Student development focuses on using formal theories of individual and group development in designing environments to help college students learn and develop (Dellworth & Hanson, 1989).

“Student affairs and services professional theory and practice is informed by a number of academic disciplines” (Ludeman, 2001). Student development theory draws from research in psychology, sociology, and human biology. Mental and physical health services rely heavily on the fields of medicine, psychiatry, clinical and counseling psychology, education, exercise sciences, and health education and wellness. The effective administration and leadership of the wide variety of student affairs and services is based on the theories of management, accounting, human resources, marketing, statistics and educational research, and leadership studies. “Two things seem clear from the literature: there is an explicit set of expectations that guide
the profession, and the concepts of student learning and out-of-class experiences are tied to the heart of the professional practice in student services" (Dadabhoy, 2001).

Current Student Services

Educational institutions have greatly expanded their capacity to reach and serve learners in the last decade. Educators, organized through divisions of student affairs, provide much of the out-of-class learning at colleges (Dadabhoy, 2001). Student services should be supportive of the part-time and distance learner, as well as the more traditional on-campus student. Students should be provided with clear, complete information about programs of study, including curriculum, course and degree requirements, the nature of faculty and student interaction, expectations about the students’ competence and skills, technical equipment requirements, the availability of academic support services, financial aid resources, and costs and payment policies (Oregon University System, 2001a). Enrolled students should have adequate access to a range of services to support learning, including admission services; registration through telephone, e-mail, fax, or Web-based technology; financial aid – scholarships, grants and loans, along with access to Veterans assistance programs; academic advising; library services; bookstore services; and adequate communication about support services (Gross, Gross, & Pirkl, 1998; Oregon University System, 2001b). Maximum efficiency and convenience should be promoted for serving students (Oregon University System, 2001b).

Johnstone and Wolfe (2000) developed the taxonomy in Table 2 to illustrate four different models of virtual entities that students may encounter. This taxonomy is
important to student services professionals as they develop and implement support services. It is particularly important to practitioners, such as advisors, as they talk with students about services that are available at each of the levels.

**TABLE 2**

**TAXONOMY OF VIRTUAL UNIVERSITIES**

<table>
<thead>
<tr>
<th></th>
<th>Listing of Services and Programs</th>
<th>Coordinated Student Services</th>
<th>Academic Articulation</th>
<th>Own Degree or Certificate</th>
</tr>
</thead>
<tbody>
<tr>
<td>University Information Consortium</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Academic Services Consortium</td>
<td>X</td>
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<tr>
<td>Virtual University Consortium</td>
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<td>Virtual University</td>
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</table>

The University Information Consortium grants no degree and offers no centralized services to students but provides information on programs and courses and through electronic links to accredited academic institutions that offer them (Spilde, 2000). The Southern Regional Electronic Campus and the California Virtual Campus are examples of this type of consortium.

Academic Services Consortium grants no degree but provides information and links to academic institutions and offers centralized or coordinated services to students, with no articulation among the consortium. The Kentucky Virtual University is an example of this type of consortium.
The Virtual University/College Consortium grants no degree but also provides information and links to institutions in the consortium and also offers centralized or coordinated services to students, with mutual articulation among consortium members. Examples include Washington Online, the Michigan Community College Virtual Learning Collaborative, and the University of Texas Telecampus.

The Virtual University organization is a degree-granting institution with no physical campus that provides centralized services to students. Examples include Western Governors University, Jones International University, and the National Technological University.

Educational institutions provide student services for distance learners for a variety of reasons which include fulfilling a learner-centered philosophy, providing assistance to students both on- and off-campus, and creating a competitive environment. Some pragmatic reasons for practitioners include improved student retention and the fact that accrediting entities require services to students be provided.

Technological applications will allow more and different types of uses to be available, including affordable e-advising and face-to-face online counseling. These advances have widespread and long-term implications for student services professionals. Not only do distance students expect access to services online, but a growing number of students who regularly attend classes on campus also expect electronic access to services (Haney, McClellan, & Kelly, 2001). This represents a shift in the delivery of student services from an institution-centric model to a more integrated and engaging model (BYU, 2000). “Whether a campus provides online learning or not, it is going to be under pressure to provide online service,” stated
Richard Skinner, president of the University System of Georgia’s distance learning program, Georgia Global Learning Online for Business and Education (GLOBE) (Carnevale, 2000g).

Student services currently include such diverse departments as childcare, campus security, collegiate athletics, the campus transit system, matriculation, and student recruitment. Many of these programs have been added in recent years to the more traditional responsibilities of student services, such as admissions, advising, orientation, housing, counseling, student activities, and placement. More recently such issues as retention of students have been added as a function of student services. This may include but is not limited to such items as learning styles, study habits, college resources, attendance monitoring (early warning systems), money management, time management, and students’ personal environments.

No one model, array of student services functions, or set of activities is recommended for all situations, institutions, or countries. Ludeman (2001), however, suggests that there are basic values and principles, professional training and preparation, and management concepts that are pertinent to an effective and comprehensive student affairs/services operation. These include partnerships with pertinent sectors to promote lifelong learning; delivery of seamless and meaningful services integrated with the academic mission of the institution; developmental services that are available to all, particularly those who demonstrate the greatest need for assistance. Considerable support must be provided for the three transitions students encounter related to higher education: the transition into higher education, through the collegiate life, and the move from education to the workplace. Ludeman
(2001) also indicated that student services professionals need to develop and adhere to high standards of practice and behavior, effective resource allocation and management, the use of a theoretical framework and sound learning principles, multifaceted funding for students services, and the use of systematic inquiry to assess and analyze the needs of students.

Electronic Student Services

Online students need as much attention and as many services as students who take courses on the campus. The focus is “not on the efficacy of technology but on surrounding issues such as will students in virtual learning situations be isolated without human support? How effective can advising and academic support services be to distance learning students?” (Johnstone & Krauth, 1996). Thus, for anyone designing EDE and services for distance learners, it is important to understand the characteristics of distance learners, what affects their success, how they perceive distance learning, and what they expect from an online course (Moore & Kearsley, 1996, p. 153). These factors have significant implications for the development of student services in EDE. Terri Johanson (2000), assistant deputy commissioner for CCWD, summarized the dilemma at the OUS Conference in the following way: “the scope of student services is expensive and challenging and we’ll have to figure out how to deliver.” Presently, little attention is given to the support required by students to be successful in EDE. Moore (2000) suggests that “student services is a key but often neglected component of student success in distance learning.”
In 1998 the Western Cooperative for Educational Telecommunications (WCET) conducted a survey addressing student services for distance learners. The report surveyed and disseminated information regarding more than 400 institutions representing the 15-state western region. Online programs were found to be in the "early development" stage, and a majority had not adapted student services online (Smith, 2001a). The study indicated that even institutions that have offered EDE have not made the necessary adaptations in providing student services to meet the needs of distance learners. For example:

- Twenty-seven percent of institutions have developed no specific recruiting material for distance programs.
- Sixteen percent still require that students come to campus to register.
- Ninety percent offer academic advising for EDE students but half have only site-based advising available.
- Thirty-one percent have no library services available for EDE students.
- Seventy-three percent have no social support networks (either online or community based) for EDE students.

As institutions have initiated EDE, the first priority has typically been to establish the academic courses and programs (Kendall, Moore, & Smith, 2001). As more students use distance education as an alternative method to traditional classroom learning, the need for infrastructure grows. Not only does this mean expanding the technology to support this method of learning but also providing the services that are necessary to help students be successful. WCET is coordinating Learning Anywhere Anytime (LAAP), a grant-funded, online student services project, “Beyond the
Administrative Core: Creating Web-Based Student Services for Online Learners" (Shea, 2001). This three-year, collaborative project is designed to use Web-based technology to deliver core student services to distance learners.

Moore, at the California Virtual Campus 4 Conference (2000b), indicated that "the level of student support services is just as important as the standards of quality of instruction because student services creates a richness of experience" necessary to student success in EDE (Moore, 2000). At the same conference about online services, Krauth indicated there has been "a delayed reaction for support services online."

Student services professionals are now exploring ways to provide EDE students with support services.

While it was to be expected in the early days of distance learning that the fundamental issue would be putting the curriculum online, it remains obvious that student support services issues are still not being addressed at the policy level. In a recent report by the National Center for Educational Statistics (NCES), student support services was not mentioned (Milliron, 2000).

However, in the recently published Best Practices for Electronically Offered Degree and Certificate Programs, there is a list of protocols offered "to assist institutions in planning distance education activities and to provide an assessment framework" (WCET, 2001). In this document, the fourth guiding principle disseminates criteria for student support services. Criteria include "appropriate services ... available for students of electronically offered programs, using the working assumption that students will not be physically on campus" (WCET, 2001). This recommendation comes after institutional commitment, curriculum and instruction, and faculty support.
This is not reflective of Granger, Appenzeller, and Brown's (2000) model that institutions should "prepare student support services first, then bring up the academic programs." This illustrates the unevenness of the development of support services for distance learners. An entire support system of academic and student services must go hand-in-hand with teaching and learning (Hrutka, 2001).

The third principle of the Southern Regional Educational Board's (2001) five principles of good practice supported Granger's model: "...ensure that all students regardless of participation modality will have access to support services without time and place inconveniences as needed to provide a quality education experience" (2001, p. 7). One way in which the Southern Regional Electronic College (SREC) intends to deliver services is through the design of an Internet-based integrated system "to serve students in the classroom or at the end of a mouse" (Southern Regional Education Board, 2000b, p. 11). Chaloux (personal communication, 2001) indicated that the model for student services for distance education is different from campus-based services and should provide a baseline set of services. These include core services such as admissions, registration, and payment; other services could be outsourced to provide services to students when needed. Chaloux offered another level of services—fee-based. That is, students who need a higher level of library services, for instance, would pay a per-term fee to access those services not used by other students on a regular basis.

As Internet distance education programs have grown, so has the number of guidelines or benchmarks developed to ensure online quality, including one commissioned by the NEA and BlackBoard, Inc.; the study, "Quality on the Line:
Benchmarks for Success in Internet-Based Education,” presents 24 benchmarks classified in six categories: institutional support, course development, teaching/learning process, course structure, student support, and faculty support (NEA, 2001).

Student support services in the abovementioned study are addressed via course structure benchmarks that focus on general program information, advising, library resources, and ways of determining if students are academically and technologically ready for distance learning. Student support benchmarks include admissions requirements, tuition and fees, books and supplies, technical and proctoring requirements, and student support services. However, no effort was made to define student support services. The report did indicate that “questions directed to student service personnel need to be answered accurately and quickly with a structured system in place to address complaints” (NEA, 2001). The report appears to have been written without the direct input of key student services personnel, with the result that it is vague and unformed and of little use to those seeking to develop quality online student services.

Currently, the trend in electronic student services is to develop self-service options that include Web-enabled services such as admissions, registration, advising, financial aid, billing, and career services (Namm & Holly, 2000; Smith, 2001a). New models for student services professionals include cohesive, cross-functional teams who can ensure continuity, consistency, and logic in the information and services provided. Student services should be available at the time and place and in the medium of students’ choosing; logically bundled and hassle free; one stop or no-stop; cost
effective; high-tech but personal; integrated, seamless, and collaborative; consistent and dependable (Emerging Vision, 1997; Namm & Holly 2000).

At the California Virtual Conference, Moore (2000b) suggests that those who implement student services for EDE need to consider the basic functions: pre-enrollment activities and admissions and registrations systems (administrative services); academic advising, financial planning, degree auditing and transcript services (individual support); access to library, bookstores, or technical support (community support). A virtual campus should be both functional, allowing students to apply, enroll, and register online, and collaborative, providing a community that brings together students, faculty, and administrators. “If students are allowed to register, enroll, be admitted and get financial aid all on the Web, get their grades on the Web page, it will benefit students and the institutions” (Foster, 2000, p. 1). Steven L. Johnson (2000), the provost of Sinclair Community College, indicated that “critical online functions include admissions, advising, placement testing, registration, and intervention help on all things.”

A number of institutions have taken steps in preparation for the virtual college (Carnevale, 2000a; Carnevale, 2000b; Carr, 2000b; Ohio Learning Network, 2000; Young, 1999; Young, 2000c). These colleges are putting online to students services that include the following:

- The application for admission,
- The financial aid application and transmittal data,
- The housing application and acceptance,
- Registration for classes,
- Electronic Data Interchange (EDI) to build databases for capturing transcript and student record data,
- Virtual counseling and career planning,
- Test scores, grades, transcripts, coded memoranda, and other documents.

Best practices often include redesigning departmental processes to encourage systemic change and departmental improvements. A variety of best practices is highlighted below.

According to the 1999 "Admissions on the Internet Third Annual Survey," 99 percent of colleges have a Web site (Tech Trend, 2000). College Web sites now rank fourth in influence among students choosing a college (Sources of influence, 2001). The WCET report, *The Power of the Internet for Learning: Moving from Promise to Practice*, outlines recommendations for using the Internet to improve education at all levels:

- Make sure the Internet resources, especially broadband, are widely and equitably available to all learners.
- Provide continued and relevant training and support for educators.
- Establish a new research and development framework around learning in the Internet age.
- Develop quality online educational content.
- Remove regulatory restrictions to e-learning.
- Protect online learning and ensure its privacy.
- Provide adequate funding.
While the WCET enumerates a number of factors that are critical to the
development and implementation of electronic services, there is no specific
recommendation regarding delivering a range of support services to students. The
report focuses on development of technical requirements, security issues, and training
for faculty. No mention is made of the services to students or the resources that need
to be in place for successful completion of courses and to retain students through
their academic programs, although indirectly, several factors may apply to providing
student services via distance: privacy of online learning; removing regulatory
restrictions, especially on federal financial aid rules; and adequate funding. To address
this lack, the Cooperative undertook a three-year project to develop the Guide to
Developing Online Student Services. It was available online until September 2001 at no cost
to educators. The document was designed to assist “higher education institutions in
developing effective online approaches to delivering student support services” (Krauth
& Carbajal, 1999, p. 1). The guide provides general tips on designing effective online
student services, brief discussions on a range of support services, guidelines for good
practice in delivering services via the Internet, and some examples of good practices
from other colleges.

In 1999 Oregon Distance Learning Council reported that providing student
services online is a challenge for the statewide system of distance learning. The
preferred outcome listed was “inter-institutional student services strategy to provide
direct and/or technology-mediated access to comprehensive student services for
distance learners” (Distance Learning Council, 1999). In the state’s ongoing attempt to
provide a statewide access model, it focused on the development of a collaborative,
statewide Web-based suite of admission, advising, registration, and student support services – a statewide “front door” or portal to courses, services, and programs offered by Oregon colleges (Statewide Access Model, 2000, p. 1). The council’s recommendation was to use existing resources and technologies to deliver EDE services, to form partnerships to share current resources, and to develop a coordinated approach to distance support services in order to provide access across the state (President’s Task Force, 1995).

In fall 1998, the Fund for the Improvement of Post-secondary Education (FIPSE) awarded the Oregon University System a grant to develop the Web-based Oregon Network for Education (ONE) (National Center for Higher Education Management Systems, 2001). The grant seeks to expand access to distance-delivered courses and programs for all citizens of Oregon and to increase cooperation among Oregon institutions. The common goal was to expand access to education through increased use of technology and partnerships in several areas: infrastructure; instruction; knowledge production; services; and governance, management, and financial models (Common Vision, 2001). The major portion of the grant focused on development and implementation of a Web-based, searchable common catalog, thus creating “Oregon’s one-stop site for college and university distance education” (National Center for Higher Education Management Systems, 2001, p. 1). The Web site contains distance education information from ten Oregon community colleges, eight Oregon universities, four Oregon independent higher education institutions, 76 programs, and over 1,900 courses. ONE is an important supplement to LAAP; it provides a centralized information center that allows LAAP faculty to disseminate
their courses and programs and for advisors to help students find appropriate distance education opportunities (LAAP, 2000). Student services were defined as “electronically provided services to support educational programs including one-stop services and informational Web sites as appropriate” (Common Vision, 2001, p. 3).

Still another innovative approach to addressing the support needs of the students is provided by the SREB, the first interstate consortium, composed of 16 states seeking to improve education from kindergarten through graduate programs (SREC, 2000a). SREB offers its constituencies a variety of innovative programs, including the Academic Common Market/Electronic Campus initiative. This initiative has provided students with opportunities to pursue studies in selected programs in other SREC states at the in-state tuition rate. The initiative benefits the growing number of working adults who cannot physically relocate to pursue their studies and removes the out-of-state tuition barrier. “It has enabled thousands of students to pursue degrees not available in their home states” (Chaloux, personal communication, 2001).

Such campus portals have evolved from static campus Web pages to a comprehensive interface for accessing university resources, community groups, and interactive learning environments (Eisler, 2000). The SREB and the University of Georgia have created an online portal to offer a broad range of services students need throughout college (Carnevale, 2000h). “Portal technology holds the potential to create a virtual, seamless learning environment for students, incorporating their experience in the classroom with the powerful learning opportunities that occur outside the classroom” (Kruger, 2000, p. 1). Portals can provide entry points to
anything from shopping for books to Web access, student activity information, class
resources, syllabi, and assignment listings, as well as online registration and tuition
payment. Henderson (2000, p. 2) indicates that a truly collaborative online
environment means that people can post and exchange information quickly and
effectively, allowing access to clubs and departmental calendars, events, online course
information, and campus broadcasts.

A vision statement issued by the Council of Ministers of Education (CAN)
calls for provincial governments to take steps to foster online learning in such areas as
online infrastructure, digital copyright, content development, research promotion, and
international strategy (Carnevale, 2001f; Paskey, 2001b). Again, however, the need to
develop and provide for a range of student support services was not clearly delineated.

Community colleges in Illinois are working toward a system for sharing online
courses and services that will allow students to choose from a "laundry list" of
classwork across the state. Called Illinois Community Colleges Online, the system
allows students to register with any institution, and the coursework is treated as if it
were offered on the students' home campuses; they do not have to worry about
transferring credit (Carnevale, 2000c). As the system is envisioned, the 48 institutions
across the state would share the 300 courses along with the technical support and
resources. The system would appear seamless to students.

Baker and Gloster (1994) indicated that streamlined services should allow
students to do the following:

- Apply for admission, financial aid, and housing,
• Transmit financial data to "Sallie Mae," the largest financier of student loans, the federal entity of financial aid,

• Analyze articulation requirements between schools, community colleges, and universities,

• Apply EDI exchange standards to build databases for capturing transcript data,

• Distribute test scores, grades, transcripts, and other documents.

Washington State University Distance Degree Program (WSU DDP) (2000) expanded on the abovementioned services and found that effective student services must include the following:

• A convenient anytime/anyplace delivery modality,

• One-stop shopping, which means that student services staffs must be trained across functions and be able to address five to eight questions about every element of a program,

• Services equal in quality and diversity to those provided on-campus.

Services based on identified needs of distance learners which criterion highlight the need for an ongoing evaluation of services and willingness of the institution to adjust services as needed. Such services include assistance with the application process; support in filing a financial aid application; development of an education degree plan; enrollment services each term; links to the bookstore, academic advisors, library access and reference support; and publications specific to the EDE student. WSU DDP also included an online graduation checklist, support from the
career counseling center, online student government, a CD yearbook, and three opportunities annually for EDE students to meet (Kendall, Moore, & Smith, 2001).

Namm and Holly (2000) suggest that electronic student services fall into three general categories: administrative support, individual support, and community support. Examples of administrative support services include the application, highlights of the course catalog, online registration, status of credits, grades, financial options, virtual college tour, and an online bookstore (Namm & Holly, 2000). Individual support services include online advising; self-assessment tools, including learning styles; and transcript evaluation. At the 2000 NASPA conference, Namm and Holly (March 2000) indicated that community support services includes faculty meetings with student representatives, study groups with chat rooms, directory of services (math and writing clinics), alumni association meetings online, bulletin of events, online student and college publications, links to jobs, scholarship information; and library services.

Administrative Support Services

Distance education technologies can be of great assistance to the administrative functions and have allowed students services personnel to serve students better, quicker, easier, cheaper and, at times, are more conveniently for the student (NASPA, 2000). Colleges offer a number of student services via distance. Administrative support services may include the online application; highlights of the college catalog; registration opportunities; credits, schedules, and grades accessible online; financial aid options; a virtual college tour; and a bookstore (Namm & Holly, 2000). As Carnevale (2000a) indicated, even colleges and universities that do not offer
distance education find it necessary to offer a variety of services to students electronically. According to the latest survey results in *Campus Computing*, the number of colleges and universities using Web applications to provide an array of services—course registration, admissions forms, transcripts, distance learning, marketing, and financial aid—doubled between 1998 and 1999 (McCandless, 1999).

A very real transformation is occurring in the administrative processes of higher education, much of it due to rapid application development (RAD) tools such as Cold Fusion. RAD has dramatically improved the way in which colleges manage communications by providing access to student, course, degree, human resource, facilities, faculty workload, financial, and departmental data (McCandless, 1999).

**Admissions Process and Application.** Admissions are the bread and butter of institutional existence (Carlson, 2000e). Whether applying online should be the only venue for the college application is the question asked by Barmak Nassirian, associate executive director of the American Association of Collegiate Registrars and Admissions Officers (American Association of Community Colleges, 2000). However, in view of the digital divide and the few numbers of online applications received, it may be too soon to move toward only one way to apply.

On the other hand, online applications are on the rise. More than three quarters of the nation’s colleges and universities now accept online applications (Jesdanun, 2000). According to the *Admissions Marketing on the Internet* annual survey (1999), 99 percent of colleges have a Web site, and the Internet is generating three to four percent of admissions inquiries. Yet NACAC reported that less than one-third of all applications were accepted online (Jesdanun, 2000).
Web applications have been defined as "transactive content applications that unite content, transactions, and personalization" (McCandless, 1999). Such Web-based services fulfill a need at a time when admission to college is becoming more competitive and growing numbers of students are applying to more than one college (Olsen, 2001a). The environment is such that it seems appropriate to say to traditional incoming freshmen: "...this is the environment you're coming to, so the online application is the natural next step," according to William R. Haden, president of West Virginia Wesleyan College (Carlson, 2000e, p. A44). To ensure use of online admissions applications, many colleges are offering incentives and providing online receipts, a service not provided to those using traditional application methods.

The move to online and Web-based applications is indicative of the shift in education toward using the technology to serve the majority of students and to automate the systems where possible. One such prototype provided by a growing number of universities is the ability to view the status of an admissions application online (INdiana Student Information Transaction Environment, [INSITE], 1998). INSITE is a Web-based service that allows students to check on the status of their application packets without making telephone calls to the admissions office.

California Community Colleges has created an online application center for the 108 community colleges in the state (CCCApply, 2001). The applications are free and easy to use. The system saves the information to a database so that students can use the same data to apply to multiple community colleges.

However, the advent of technology is not without difficulties. Students applying to medical school were delayed in doing so when the new Web-based
application service did not work as planned. The American Medical College Application Service, which processes applications to 115 medical schools, expected to have the online Web application available on April 1, 2001; then May 1; it was June 18 before applicants submitted the online application (Mangan, 2001).

Conversely, the shift to electronic applications has practical benefit. Data can be retrieved and fed directly into the computer, allowing data management tools to help process the data. Much of this work is currently handled manually in colleges and universities across the country. Companies such as CollegeNET work with vendors of student information systems, such as Datatel and SCT, to ensure the application is transparent to students as they apply online. The company provides innovations in admissions, "forms commerce," alumni development, e-mail management, and event and resources scheduling (Casey, 2001, p. 3). It offers additional services such as free upgrades and maintenance, customer support, and trained technical support staff (Fulmer, 1999).

Web traffic to college sites is primarily via college-specific search engines as well as through general Internet search engines such as Yahoo and Alta Vista (IMP Worldwide Inc., 1999).

Catalog and College Publications. Most colleges use their Web sites as a way to disseminate information to students. An online catalog is one way to provide students with information about the college, curriculum, program requirements, and transferability of credits. It also provides students with essential data about scholarships, financial assistance, due process, and scholastic honors (Chemeketa, 2000). But the majority of colleges provide access to students without a high level of
interactivity. Western Governors University, however, offers an exclusive
SmartCatalog opportunity for students – the creation of an online, interactive course
catalog and student profiling system (Western Governors, 1998). For example,
California Virtual Campus, the largest online education project in the country,
provides an expanded distance education catalog; the revitalized catalog lists more
than 3,100 distance education courses offered by public and private colleges
throughout the state (Diedrich, 1998; Young, 2001b).

The Open University (UK) put the students’ handbook online and felt “it was
a win-win situation” (Daniel, 2001a). The university saves the cost of printing and
mailing 200,000 copies, while students can immediately consult the most current
version and locate the areas of most interest.

College Fair. The National Association of College Admission Counseling
(NACAC) held the first virtual college fair nationwide in March 2000 (Carlson, 2000a;
Johnstone, 2000). While it was not entirely successful – the system crashed due to
unanticipated heavy traffic – this event highlighted the growing popularity of student
services delivered electronically. The second online college fair for international
students was held February 21, 2001 (AScribe Newswire, 2001). This free program is
designed to help students and parents negotiate the college search, admissions, and
financial aid process. This interactive continuum allows students to chat live with
representatives from colleges and universities across the United States and to view and
tour college campuses online. More than 10,000 prospective students registered for
the Online International Student College Fair program in 2001. Also scheduled are
fairs for business students and students of color as well as two general interest fairs.
Last year more than 400,000 students and their families explored their options for higher education at an NACAC college fair (AScribe Newswire, 2001).

Onlinecollegefair.com is a virtual recruiting program for undergraduate students. Of the 73 college fairs held this year, ten of them were virtual/online fairs through this program. That number is expected to increase to 12 in the next academic year “though recruiters have been slow to accept them” (Rivard, 2001a, p. 40).

College Tour. Virtual college tours have come a long way from the still photographs and text narratives that characterized presentations just a few years ago (Dyrli, 2000). Sites now include audio and video features that allow prospective students to wander around an online campus. “The virtual Web tour is breaking new ground as an interactive college admissions tool” (Dyrli, 2000, p. 112). In fact, virtual tours outnumber actual campus tours, (Students Want More College Information, 2001). Furthermore, a number of colleges are using “bubble” images as part of their Web sites’ virtual tours (Carlson, 2001a). The images offer prospective students a view of a particular campus vista and are showcased on Web sites. Colleges using the technology include American University, the University of Maryland, Radford University, Duke University, Eastern Illinois University, and the University of Tennessee at Knoxville (Carlson, 2001a). A number of companies, such as CampusTours, CollegeNET, and CollegeView, provide developmental assistance to colleges – for a fee – to offer a variety of Web-based campus tours.

Credits, Grades, and Schedules. Distance learners, like on-campus students, need to have access to grades at the end of the term, to their current course schedules, and to the credits they’ve completed, as well as how those credits apply to the degree
requirements. Current technology is adequate to provide many of these services to students via distance. Many colleges are providing some, if not all, of these services online. A growing number of colleges are using Web-based technology to offer access to unofficial transcripts, individual class schedules, and term grades. A number of colleges have also taken advantage of the technology to offer increased functions, such as degree audits and transferability of coursework.

California community colleges provide an advanced level of services to students through an electronic advising program, Articulation System Stimulating Interinstitutional Student Transfer (ASSIST). ASSIST allows students to compare colleges based on the transferability of their coursework. To do this they choose a major at a specified four-year institution and are notified as to which credits transfer in what capacity. This allows them to make informed choices and to know which credits they still need to complete before they leave the community colleges. William Rainey Harper College in Illinois is using the Internet to provide students with education and academic advising opportunities. The college provides course articulation information to transfer students via the Web. This site is one of the top ten downloaded items from the college Web site (McLaughlin & Otto, 2000). An unforeseen side effect was that the use of the site resulted in students and advisors having an accessible, centralized area for sharing consistent and reliable information, as well as a link to virtual interaction. An unanticipated side effect has been that the site serves as a marketing tool, allowing prospective students to see the community college offers a seamless progression with four year colleges and universities (McLaughlin, 2000).
An innovative program modeled on the credit bank at SREB allows students at six universities in six different states to take courses while banking their credits toward a degree. Six universities have collaborated to offer a Master's degree in family financial planning. "What's remarkable about this is that it crosses state lines, and it's working," says Virginia Moxley, associate dean of academic affairs for the College of Human Ecology at Kansas State University (Carnevale, 2001k, p. A38). For students this means they enroll at one of the participating institutions and take courses from all six. A student receives her/his degree from the college in which he or she is enrolled.

Financial Aid. With the recent growth of online education, financial aid rules have become obstacles to students (ACE, 2000; Carnevale, 2000c; Carnevale, 2000e; Carnevale, 2001f). No longer is it adequate to consider only traditional methods of delivering education and approaches to the dissemination of financial aid dollars. The rapid growth of distance education has rendered the so-called "12-hour rule" obsolete, especially for distance education providers (Carnevale, 2000d; Carnevale, 2001b; Carnevale, 2001c).

The statutes and regulations governing the Title IV, Higher Education Act (HEA) programs were developed when far fewer institutions were actively engaged in distance education as it's defined today (Leibovitz, 1998). "The post-secondary education landscape has changed dramatically in the last five years due to the accessibility of technological means of communication" (U.S. Department of Education, 2001, p. 5). In May 1998, the Institute for Higher Education Policy held a roundtable discussion in Denver, Colorado to discuss student aid for distance learners. The group met to consider four developmental models: the traditional university, the
consortium model, the combination model, and the non-traditional model (Institute for Higher Education Policy, 1998). A number of principles were developed and some of them acted upon. These include the following ideas: student aid should be available without regard to the mode of instructional delivery; delivery of aid should be learner-centered; awarding of aid should be tied to standards of progress, not arbitrary measures of time and regulations; and regulations should allow flexibility in determining how to calculate aid for costs of attendance (Institute for Higher Education Policy, 1999).

As a result of this and other discussions, the federal Department of Education is currently experimenting with a program – the Demonstration Project – to eliminate both the 50 percent and the 12 hour rules, in an effort to meet the changing needs of students (Carnevale, 2000d). According to a report on the Distance Education Demonstration Project (Demo), the 1998 Demo Project was intended to test the quality and viability of distance education as a result of growing technological changes. It authorized the U.S. Secretary of Education to waive the statutory requirements for up to 15 institutions. Now in its third year the Demo Project continues with 35 participating institutions.

Furthermore, Marianne Phelps, distance education director for the federal education department, suggests that institutions consider competency-based education and self-paced instruction to students (Carnevale, 2000c; Department of Education Report, 2001). Balancing innovative distance education programs with new approaches to financial aid won't be easy. L. Vickers, senior director of financial aid at the University of Maryland, a participant in the Demo Project, said, "The program
provides a method to explore ways to update the federal law as distance education grows in academia" (Kerrey, 2001, p. 2).

The Department of Education spent several months asking groups of college officials about issues affecting distance education, especially the 12-hour rule (Carnevale, 2001j, p. 1). Maureen McLaughlin, deputy assistant secretary in the Department of Education’s Office of Post-secondary Education, said “they would consider disbursing financial aid to students directly, instead of giving it to institutions as is done now” (Carnevale, 2001c, p. A33).

In 2001 HR 1992 was passed by the House Committee on Education and the Workforce subcommittee. This legislation eliminates the 12-hour rule for full-time status and revises the rules that prevent institutions from offering more than 50 percent of coursework via distance or from enrolling more than 50 percent of their students at a distance (Carnevale, 2001h). However, the legislation still needs to be approved by the Senate (Carnevale, 2001d).

Another step was taken in 2000, when a bill was approved by the federal government giving the electronic signature the same legal status as written signatures (Burd & Foster, 2000). The Electronic Signature Act of 2000 allows colleges to conduct most business transactions with students via the Internet and could speed up the delivery of federal aid to students (Olsen, 2001b).

Also available online are “some great financial aid resources” (fastweb, 2000). Fastweb.com is the Internet’s largest no-cost search engine for free scholarships (fastweb, 2000). Students can apply online for more than 4,000 scholarships, receive scholarship updates and e-mail notices, and receive tips on prioritizing the scholarship
applications. Other electronic resources for financial assistance include Peterson’s online (Velocity, 2001). This Web site offers advice to students and parents on completing the forms, income tax calculations, federal college codes, and even what services are available from students’ local colleges.

A recent service from Sallie Mae is electronic billing (Olsen, 2000c). The college sends its billing file via the Internet to Sallie Mae, which uses an online payment company. At the end of the month, Sallie Mae sends the college an electronic file that gives payment details in a readable format for the college system. The data are owned by the college, which can use the information to analyze payment behavior. Also available to those who paid online are financial aid counseling through electronic mail and Web chat sessions. This service allows an institution to group together all college-related expenses – tuition, room and board, bookstore charges, parking and library fines – and to present them in monthly statements (Olsen, 2000b).

Some colleges have tried to meet the needs of students by providing automated financial services from their own Web sites. For example, effective summer of 2001, students at the University of Minnesota will be able to complete all their federal financial aid forms using a series of Web pages (Carlson, 2001d). Online applications have been available for over three years, but parts of the process have still required the use of the more traditional mail systems. Six to eight weeks were required between the application process and notice of qualification and receiving the award. The University of Minnesota has cut that process to four days. Beginning July 1, 2001 students will receive e-mails directing them to a Web site, where they can enter a password and gain access to accept, reject, or reduce the amount of their loans.
Serving more than 30,000 students receiving need-based financial aid, the automated system can deliver the aid more quickly than traditional methods.

Penn State provides a link to its on-campus financial aid office, as well as links to the Education Resources Institute (TERI), a non-profit organization that offers loans to students in specialized fields of study, Sallie Mae’s career training loan program, and Key Career Loans geared toward distance learners (Online Student Services Comes of Age, 2001).

Graduation. The Open University (UK) conducted the first virtual commencement in March 2000. The graduation ceremony featured a chat room for the graduating students and an address by Tim Berners-Lee, co-creator of the World Wide Web, from Massachusetts Institute of Technology. The academic address was delivered to an auditorium filled with faculty in academic regalia but to no students. The ceremony conferred degrees on 24 Master’s students who had completed a yearlong distance degree program (Walker, 2000, p. 1). Students were able to contribute to a Web page template, rather like a yearbook. The director of the Master’s program, Robin Mason, stated he “will call out the graduates’ names and a Web template will come up with the sound of them speaking” (Walker, 2000, p. 1).

Also planning to graduate students online are Jones International University; Lesley College in Cambridge, Massachusetts; and the University of Connecticut (Graduation Speakers, 2000). Obviously the technology is now available for a virtual graduation.

Orientation. A growing number of colleges have begun to offer online orientation programs (Carnevale, 2000). An orientation to distance learning must be
multi-faceted: an orientation to the college and available resources, a primer to the
distance learning concept, an introduction to the technical skill level required for the
coursework, and a method of determining if EDE is right for the student.

A boot-camp style program offered by Boise State helps prepare students by
drilling them on software called Lotus LearningSpace. Also included are activities that
Teach students such skills as how to post an e-mail message, how to chat online, and
How to insert graphics into documents and class assignments. As students complete
The training, they chat online and get to know each other before classes begin. This
May be a way to build community among distance education students. An additional
Benefit is that the arrangement reduces the workload of technical support staff
(Carnevale, 2000a).

A similar program, designed to enhance learning with technology, has been
Used successfully by University of Dayton (Carlson, 2000d; Young, B., 2000). While
The intent is to provide roommate contact information, a chat system, and general
Information for students, the program also includes interactive training sessions to get
The students reading the university manuals and policies, without the cost of printing
And postage (Young, 1999). Another component of the university orientation program
Is a profile search that allows incoming students to search for other residents with
Similar interests.

Still another model at Rio Hondo Community College (CA) provides an
Orientation to distance learning concepts. This orientation was designed to help
Students assess whether they are ready to be successful in an online course. Generally,
There is an online assessment instrument, frequently asked questions about the
technology and level of computer competence, as well as tips on navigating the site (Online survival guide, 2000). Students answer questions about their involvement in coursework, long-range plans, and the support needed to be an effective learner in this method of delivery (Jana, 1999). An online survival guide also includes information on basic Internet skills, free e-mail provider services, and college policies and procedures.

Penn State developed a new online “Orientation to Student Resources” section that covers student policies, library resources, academic advising, and technical support (Online Student Services Come of Age, 2001). This was done after listening to students who indicated the original site was too test dense and hard to navigate. The new orientation provides students with an idea of the skills they might need – both technical and learning skills.

Registration. An increasing number of institutions are developing alternatives to face-to-face course registration, including mail-in, online, and interactive voice response (IVR) telephone registration systems. Online and IVR were designed to accelerate the registration process for on-campus students (Connick, 1999). Since that time, the application of such services has become more widespread and now benefits the distance learner. This service to students is considered to be one of the most critical for distance learners, allowing them to gather pre-enrollment information such as catalog information, application procedures, course descriptions, and policies and procedures as well as the actual course registration.

New technology options make it possible for learners to receive information and begin participating in a course within seconds of online registration. Many student
information systems now offer students a way to register online via the Web, without stepping foot on campus (Gilbert, 2000b).

The Open University (UK) provides online registration but finds only 30 percent of students use the service. The other 70 percent still seem to need some face-to-face interaction or “some human reassurance about their choices” (Daniel, 2001b). Athabasca University (CAN) sends an e-mail message automatically to students as they enroll in classes; the next day a packet of information is sent to the newly enrolled student (Feemster, 2001a).

Some colleges, like Weber State, allow all students to “have the advantages of online services” (Smith, 2001a). Weber State has fully integrated the most critical online student services, such as admissions, registration, and fee assessment. Kiosks were provided as a place for students to access their student records. Access to student schedules, grades, registration for coursework, the ability to print a graduation evaluation, and ability to see unofficial transcripts are also available at the kiosks. Smith (2001a) enhanced this concept by developing this as a portal into Weber State so “students could bookmark the page and get all pertinent information in one spot.”

Textbooks. Great strides have occurred through the use of technology for the online purchase of textbooks. “A good education is usually built on the three R’s, but success in shopping for college texts has more to do with three P’s: persistence (to find the books on depleted shelves), patience (to stand in line), and plastic (as in credit cards to pay the hefty price),” (Terrell, 1999, p. 74). Faculty teaching distance learning courses are encouraging students to use online stores to purchase books.
The biggest and best known of the online retailers are VarsityBooks.com, BigWords.com, ecampus.com, textbooks.com, and eFollett.com. Online retailers have a number of aspects in common – large title databases searchable by title, author, subject, and ISBN, along with discount prices and shipment within 24 hours (Kranberg, 1999). Many online retailers, as part of a discount program, are pricing books significantly lower than those of college bookstores (Blumentstyk, 1999; Kranberg, 1999). Typically, books from online retailers will sell for 25 - 40 percent below suggested retail prices, thus generating concern for the future of the traditional college bookstore (Blumenstyk, 2000b; Roach, 1999a). The online sites have also made it easier to obtain books (Mand, 1999; Strugatch, 1999; TGSA, 1998; Weller, 1998).

A number of campus bookstores allow students to sell online books back to the college bookstore. Consequently, the Graduate School of America has made it easy for students to sell their used books online, though they still have to be shipped back to the site (Chemeketa, 2000; EOU, 2000; TGSA, 1998).

It is also expected that digital texts will be less expensive than the hard-copy counterparts.

Joe Walwik, an instructor at Blue River Community College in Missouri, is thrilled with the Western Civilization text he’s using from a company called Digital Learning Interactive (Blumenstyk, 2001b). Available in CD-ROM and on the Web, the text provides overviews, primary readings, and documents and interactive maps. The product costs about $50 a semester, a fraction of what students would pay for a text and supplementary material (Blumenstyk, 2001b).

Also currently available to students is the eBook Reader, free software that allows the student to read e-books without being connected to the Internet (Students Tools, 2001). During the fall 2000 term, the University of Virginia replaced printed books with electronic ones in a specialized history course. During this experimental course, a seminar about the Salem witch trials, students were issued hand-held computers loaded with several assigned textbooks as well as “electronic versions of every warrant, indictment, and deposition from the trial” (Young, 2001a, p. 1). The course was designed to take advantage of two of the most useful features of digital books – the capacity to hold massive amounts of data and the ability to search for a key word or phrase – to assist the students in becoming “on the spot historians” (Young, 2001a, p. 1).

However, students were quick to discover the disadvantages to high-tech books; several lost marginal notes and bookmarks when the computer erased their data. “Nobody reads books on the Web; it’s not a reading technology,” stated David Seaman, director of Virginia’s Electronic Text Center (Young, 2000b, p. 2). Students
indicated they used the technology mainly for research, calling up electronic versions of rare documents. Several students indicated they purchased printed books for the course as well.

In July of 2001, 12 university presses agreed to distribute some of their material through Ebrary, an electronic publishing company that plans to make scholarly and popular content available online (Carlson, 2001c). Users will be able to read the books free online but will pay a per-page fee for each they download or print.

But how does the online bookstore measure up to the traditional college bookstore? According to U.S. News and World Report (Terrell, 1999), the results were disappointing. In a recent settlement against VarsityBooks.com, college stores asked the bookseller to refrain from advertising discounts up to 40 percent (Blumentstyk, 2000d; NACS, 2000). It is possible to get a good price on books, but there is no single best price leader among the bookstores online. In a recent survey on the online book retailers, Weisbecker (2000) found that the sixteenth edition of Samuelson's *Microeconomics* cost varying amounts from the different booksellers. Table 3 illustrates the varying cost of one textbook.

The most vulnerable point for online bookstores is on-time delivery (Freeman, 1999; Schoenberger, 1999). A common complaint is that required texts were not available, making it difficult to deliver in a timely manner. Because of this, if the intent is to offer students an attractive match of lower prices and convenient shopping, online bookstores fail to earn a passing grade. Furthermore, the sales tax and the shipping charges negated each other (Terrell, 1999).
TABLE 3
COMPARISON OF TEXTBOOK COSTS

<table>
<thead>
<tr>
<th>Book Seller</th>
<th>Price</th>
<th>Notes</th>
<th>Total Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amazon.com</td>
<td>$57.50</td>
<td>$4.29 shipping</td>
<td>$61.79</td>
</tr>
<tr>
<td>bigwords.com</td>
<td>$61.94</td>
<td>Free shipping</td>
<td>$61.94</td>
</tr>
<tr>
<td>Varsity Books</td>
<td>$61.38</td>
<td>If only book, shipping is $4.95.</td>
<td>$66.33</td>
</tr>
<tr>
<td>Efollett</td>
<td>$67.33</td>
<td>Free shipping - virtually the same textbook cost as Penn State</td>
<td>$67.33</td>
</tr>
<tr>
<td>Penn State University Bookstore</td>
<td>$67.50</td>
<td>On-campus purchase</td>
<td>$67.50</td>
</tr>
</tbody>
</table>

Despite the disappointing results, the numbers who use this online service continue to increase. One possible reason is that Web sites are now posting students' comments (Paskey, 2000b), giving students an opportunity to rate their texts. Another reason is the online stores do provide shoppers with an opportunity to earn better discounts through bonuses: the more they spend the more they can save. However, it is not yet clear that discounting is the most important factor motivating students. In one survey, half the students with a credit card indicated their parents paid the bill; those students might be moved by convenience rather than price (Weisbecker, 2000).

Another possibility is the massive marketing campaign using low-tech legwork of student representatives to sell the site (Carlson, 2000c; Weisbecker, 2000). Jupiter Communications claims that 90 percent of college students have access to the Internet, and they make online purchases at a rate of three times that of the general population (Weisbecker, 2000).
Individual Support Services

Included in this category that Namm and Holly (2000) developed are those student services that must be personalized to be of most benefit to the students. Services include accommodations for special needs, advising, self-assessment including learning styles, transcript evaluation (degree audit), personal counseling, and access to job placement.

Accommodations. Colleges are making large investments in technology as part of their administrative and information systems. In purchasing technology, it is important to incorporate considerations about accessibility for students and employees with disabilities (Carter, 2001; Coombs, 2000; Lorenzo, 2001). Consequently, colleges strive to give students with disabilities access to online courses and services. Many students, however, find the Web sites' technological displays are more of a burden than an aid (Askren, 2001; Carnevale, 1999b; Carter, 2001).

"The basic responsibility of colleges is to provide equal and equitable access to all of the facilities, programs and services" (RS Technology Services, 1999). The basic required academic accommodations include taped or electronic texts, Braille, enlarged print, notetakers or real-time captioning, interpreters or real-time captioning, and alternative testing. On May 17, 2001 Oregon State Assistant Deputy Commissioner Terri Johanson indicated to the Council of Student Services Administrators that access for all was "a critical component of distance learning." Before students request access to digital information, it is imperative to build flexibility and accessibility into institutional systems and Web sites (Anderson, 2001).
There is also continued confusion over the interpretation of the laws that address Web accessibility guidelines (Lorenzo, 2001). The three broadly defined laws that EDE and student services professionals need to be concerned with are section 504 of the Rehabilitation Act; section 508 of the Rehabilitation Act; and the Technology Related Assistance for Individuals with Disabilities Act, also called the Tech Act. Section 504 requires that “programs, facilities, and services be fully accessible to individuals with disabilities” but makes no mention of electronics or Web pages (Stewart, 2001). Section 508 specifically address “electronics” and “information technology” as it relates to equal access (Stewart, 2001). However, it is unclear whether section 508 applies to colleges and universities. The Tech Act (1988) was amended in 1994 to “provide financial assistance to the states to support systems change and advocacy activities designed to assist each in developing and implementing a consumer responsive statewide program of technology-related assistance for individuals with disabilities.” The Telecommunications Act of 1996 increased the standard from “reasonable” to “readily achievable” (Council of Student Services Administrators, 2001). This change challenges colleges to be proactive rather than reactive.

While the courts are still sorting through the specifics of the law’s requirements, institutions are preparing their own accessibility guidelines, hoping to make faculty think carefully about the needs of the students who require accommodations. Many students’ accessibility issues will be resolved on a case-by-case basis. It is expected that the law will not require colleges to provide special equipment to take online courses. The general rule is that students with and without disabilities should be assured of the same access to online courses (Carnevale, 1999b). The U.S.
Department of Education’s Office of Civil Rights (OCR) has specific guidelines for compliance with disabilities law on traditional campuses, but the office has not yet issued such rules for distance education. Because such rules have not been issued, OCR often refers colleges to the online accessibility guidelines published by the California Community College System as a standard for accessibility.

However, colleges are not doing enough to make their EDE programs compliant with federal laws that mandate online learning programs be accessible to all (Lorenzo, 2001). Poor design creates barriers for students using EDE. Several online services are available to help Web site designers build accessible pages. These include a program called Bobby that checks all pages and points out potential problems. The page was created by the Center for Applied Special Technology (CAST), an organization devoted to using technology to expand opportunities for everyone (Carnevale, 1999a). One of the drawbacks of the software is that a Web site may pass the test of Bobby but still be unable to provide information students need for their latest homework assignment (Junco, 2001).

Recently, the Northwest Center for Technology Access at Oregon State University published guidelines for accessibility for students with disabilities (Stewart, 2001). These guidelines are being used statewide for the implementation of standardized services to distance learning students.

The nation’s first MBA program for the deaf or hard of hearing is being developed by Desales University in Pennsylvania and a technology foundation (Mangan, 2001). Mohamed Latib, vice president for program development, indicates
that "when you're taking a course online, your disability is transparent" (Mangan, 2001).

While providing access seems like a reasonable accommodation, a recent court case indicates otherwise. College officials at Florida Gulf Coast set up an online version of the University Colloquium, *A Sustainable Future*, for students who could not attend in person (Young, 2001c). To take the online class, students must be enrolled in an online degree program, live some distance from campus, have a physical disability that prevents them from traveling to campus, or have "extraordinary social, familial, economic or work-related constraints" (Young, 2001c, p. 1). The plaintiff suggested that the course excluded non-disabled students. However, the Department of Education ruled the practice was legal. The decision also noted that "no regulation requires that all courses, accommodations, or services be available to persons without disabilities that are available to persons with disabilities" (Young, 2001c, p. 2).

**Advising.** Academic advising is an essential element of students' collegiate experience. Academic advising has been a feature in higher education since colleges were first established in colonial America (Habley, 2000). Advising in colonial colleges was performed by faculty who were responsible for the intellectual, ethical, and moral development of the students; this mentoring role remained intact for nearly two centuries. It wasn't until elective credits became part of the curriculum that advising was delivered by professional, full-time staff outside the faculty tenure track (Gordon, Habley & Associates, 2000).

Academic advising is one of the institutional functions that connect all students to the college. Academic advisors help students translate the requirements of
the college into a planned program of study. They help students match their interests and timelines with course requirements and sequencing of coursework. The advisor interprets institutional expectations regarding personal growth in the developmental dimensions and helps students explore alternative paths to meeting the expectations (Dellworth & Hanson, 1989). The American Association of Community Colleges (AACC) indicated in a list of recommendations that “each community college should ensure its learner support systems provide attentive advising and follow-up for all students” (American Association of Community Colleges, 2000).

Today’s academic advising is supported by computer technologies, particularly such activities as registration, degree auditing, and general information dissemination. Academic advisors are being confronted with a variety of opportunities and choices, as technology becomes more prevalent on campus (Steele, Leonard, Haberle, & Lipschultz, 2001). Maday (2001) indicates that academic advising should be available to distance learners at the same level that it is in a traditional campus setting. However, providing this dimension of student support services to distance learners is problematic for many colleges today, and if provided, is done in a limited capacity. Formal research on the impact of technology on advising has been limited; what has been done has documented usage patterns (Lyon & Carpinelli, 1996), satisfaction and convenience (Sotto, 1996), and the impact on retention and advisor contacts (Holcombe, 2001; Severy & Slinger, 1996). Though a number of authors have written about the potential of the impact of technology on advising, financial constraints and budgetary considerations have resulted in a delay in the implementation of technological innovations.
The National Academic Advisors Association (NACADA) (2001) revised and published a list of critical issues in academic advising technology. Such issues include but are not limited to ensuring document integrity in advising via technology; identifying processes for addressing technology concerns; taming technology – managing one-to-one contact, managing data warehousing, providing accessibility for students and advisors, and informing multicultural concerns with technology.

The most prolific use of technology to deliver academic advising is through the World Wide Web. An increasing number of institutions are using the Internet as an information and communication tool for advising (Emerging Visions, 1997). A growing number of advisors have begun to communicate with their advisees through e-mail, allowing them to answer questions directly and efficiently without delay. Students may interact at their convenience, but there is no one-to-one interaction. In an effort to make these services convenient and available, virtual kiosks are usually available to students on the campus, increasing access for students who may not have computer access from home. Electronic kiosks allow students access to curriculum degree requirements, student academic records, individual progress reports, class schedules, course availability, and the opportunity to update personal data (Labhard & Nguyen, 1997).

One example is University of California Los Angeles (UCLA), which offers an online information booth from 3-5 p.m. weekdays, during which time students have the opportunity to ask such specific questions as “Is it too late to drop the literature class?” “Do I need to study a foreign language to major in European studies?” This service, called “virtual counseling” by students, is part of a package of online tools to
support undergraduate education. The package includes a personal schedule of classes, links to classes and student services Web sites, deadline information, academic calendar, and more (Page, 1999). An added bonus for students has been the addition of online "office hours" to the instructors' workloads to ensure advisors are available to their online students (McMurtrie, 2000). Advanced technology such as OfficeHoursLive has provided the opportunity for faculty to speak to online students using live audio, showing any content posted online in their course management system (Precis, 2001). Terri Johanson, (2000) assistant deputy commissioner for the Department of Community Colleges and Workforce Development in Oregon, indicated "some sort of static information regarding advising needs to be provided [at level one] and that counseling services needed to be provided as they were for face to face student population."

Advising serves as a bridge between the college's administrative organization and faculty. It is an important element in forming and sustaining the relationship between the student and the college. Table 4 summarizes some features that are available any time and anywhere through the use of the Web.

A growing number of innovative strategies using portal technology are now available. However, many community colleges do not have funding to purchase the level of technology that is required to run many of the programs or to develop the level of technological sophistication that is expected by today's students. A college must make a significant investment of money, staff, and time to develop and implement a campus portal system (Gilbert, 2000a).
### TABLE 4
ADVISING ON THE WORLD WIDE WEB

<table>
<thead>
<tr>
<th>Basic Services – Text Info</th>
<th>Mid-Level Services</th>
<th>Advanced Services</th>
</tr>
</thead>
<tbody>
<tr>
<td>Policies and procedures</td>
<td>Online forms ---</td>
<td>Web registration</td>
</tr>
<tr>
<td>Frequently asked</td>
<td>applications, requests for information</td>
<td>Degree audit</td>
</tr>
<tr>
<td>questions (FAQ)</td>
<td>Search capability</td>
<td>Schedule planner</td>
</tr>
<tr>
<td>Address, building info,</td>
<td>Order forms, such as for text books</td>
<td>Articulation and transfer evaluation</td>
</tr>
<tr>
<td>room numbers</td>
<td>Audio or video (taped lectures, links to taped material on other sites)</td>
<td>Access to student records</td>
</tr>
<tr>
<td>Phone numbers</td>
<td></td>
<td>Grade point average</td>
</tr>
<tr>
<td>Hours of operation</td>
<td></td>
<td>calculator</td>
</tr>
<tr>
<td>Name and/or e-mail contact</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Links to other resources</td>
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Portal technology was designed to create a seamless flow of information to students, faculty, staff, alumni, and even to prospective students (Gnagni, 2001). In an effort to provide this information to the community college system in Oregon, the Office of Community Colleges and Workforce Development has sponsored the development of the online advisor. Portal technology has allowed each of the 17 community colleges to customize its site, while providing access to advising information statewide, essentially creating a pocket-sized version of the campus Web (Gilbert, 1999; Olsen, 2000b). This database-driven technology allows the portal to appear to the student as the college’s own site (Blessman & Martin, 2000). Students are encouraged to personalize the system, which allows for appropriate content to be displayed based on students’ individual needs. Students are able to send an e-mail to an advisor from the page; the advisor, in turn, receives an updated profile of the student based on his/her answers to a survey.
While this is a beginning to providing a statewide standard of student services via distance education, some individual colleges have taken additional steps. Wright State University, in an attempt to send advisors to their outlying sites, had been funding long-distance trips for brief meetings with students. However, July 2000, Wright State implemented a real-time collaboration Internet system that allows the students to receive the same level of advisement as on the main campus 200 miles away (Souza, 2001). Students and advisors now share video, voice, and data over their computers in real-time, and scheduling advising appointments has become easier. The technology is also being used to teach classes, conduct professional development seminars, and provide statewide instruction to K-12 teachers.

Capella University recognized the need to connect the learners to the institution from the time learners enrolled. Consequently, a collaborative effort between the College of Education and Enrollment Services was designed to help new online learners connect with the college. New online learners were given a password and directed to the Web board, where they were able to participate in threaded discussions, post questions, master the practice course, search the library, order texts from the bookstore, and build community (Maday, 2001). Capella University, a totally virtual campus, has also moved the advising component from faculty to a more traditional advising center. It has also developed a five-week online course that focuses on completion strategies for students, in an effort to help improve retention strategies (Capella's Corps of Online Advisors, 2001). The course includes guidance on how to use the advisors more effectively, as well as procedures for accessing
information for the Web and the online library. Students are also required to write a short paper in APA format and to create a degree completion plan for future studies.

**Transfer Center.** A number of community colleges have developed and implemented an “eTransfer Center” that provides basic information to students regarding degree requirements, general information about Oregon’s colleges and universities, and support programs at other schools (Chemeketa, 2001a). General information also includes scholarship information and transferability of credits and degree.

The Open University, one of the largest and most successful of distance learning mega-universities, has an interactive online system that allows students to list their coursework and to get an indication of how the Open University (UK) would count these credits toward a degree (Daniel, 2001b).

OUS has begun work toward using electronic advising to enhance the transfer option. Currently Southern Oregon University has put electronic advising online to assist students transferring from an Oregon community college to the four-year institution (SOU, 2001). Like ASSIST, this program allows students to determine the general education requirements at SOU and whether they have met those requirements. Unlike ASSIST, it is not yet available for the OUS system. Nor does it review the students’ transcripts to determine course equivalencies at the transfer institution.

A second innovative program was announced by the League for Innovation in the Community College, an organization that promotes the use of technology in community colleges. The League created guidelines that call for students to easily
transfer lower-division credits earned at community colleges to the universities (Carnevale, 2001h). It is expected that a student earn a vocational degree from a community college, then transfer credits to a distance learning college such as the University of Phoenix for the general education curriculum. Such an arrangement is known as “upside down 2+2 curriculum” (Carnevale, 2001k, p. A38).

**Housing.** Many institutions offer on- and off-campus housing services to students via pen-and-paper listings in bindings that individuals may peruse. Iowa State University has recently implemented an online roommate matching service (Rosenthal, 2000). Prospective roommates complete a questionnaire with personal information (age, gender, smoking and alcohol use), and desired living arrangements (roommate gender, smoking and pet preference, alcohol use, and study preferences). This information is retained in a database for approximately four weeks, allowing students to access and assess demographic information to choose a roommate. Plans include a searchable Internet database and online forms.

**Personal Counseling.** *Distance Education Guidelines for Good Practice* (American Federation of Teachers, 2001) calls for, among other things, clear standards for counseling for online students. It has been suggested that a distinction be made between virtual counseling and virtual advising (Drew & Chapman, 1999). While many students, both distance learners and the more traditional on-campus students, will access advising services, only a few will utilize the personal counseling services. Virtual or electronic counseling introduces issues of confidentiality of student records, counseling forms online, and the added need for security with such personal issues.
Both services require a high level of security and both must address confidentiality issues. However, many of the systems around advising can be automated and can utilize technology to deliver services. It is more difficult to provide the same level of counseling services via technology that one can in a face-to-face counseling session. "Accessing virtual counseling is easy. Students enter the chatroom every weekday from 3:00 to 5:00 p.m. by logging in with a valid student ID and password" stated Margaret Matzinger-Tchakerian, coordinator of the Virtual Counseling at UCLA (1999, p. 1).

On the other hand, distance education students don't have to sacrifice the personal touch. Some colleges are using online live video to meet students face-to-face. Students can also use e-mail for personal and group counseling (Carnevale, 2000a). There are still drawbacks with this service: online video is not provided on a regular basis; the technology is costly; and few students have access to the digital cameras necessary. However, more and more undergraduates are turning to virtual counseling for answers to questions and to avoid waiting in lines, waiting for a phone call, or walking across campus (Page, 1999). Students have indicated their willingness to ask questions about highly personal topics via e-mail.

QuickStart Counselor, an affiliate of Peterson's Publishing, allows up to 60 minutes of real-time conversation with a counselor in a chat room format (Velocity, 2001). QuickStart Counselor provides useful advice in an interactive assessment designed to explore options in higher education. Through the short assessment instrument, an online counselor guides the student to Web and print resources to
target the unique needs of students. For a fee of $19.95 per term, students have access to an online counselor from 8:00 to midnight, EST (Velocity, 2001).

A practical consideration is scheduling and implementation of virtual counseling appointments with counselors. The process must be worked out along with more "traditional" ways of offering counseling services (Drew & Chapman, 1999). Possibly the use of the electronic signature, newly approved by the United States government, can be used to ascertain the identity of the student online seeking counseling.

Testing and Assessment. Literature in the area of assessment of online learning has identified the desirability of multiple forms of assessment (Dereshiwsky, 2001). Paloff and Pratt (1999) advocate the use of both quantitative and qualitative forms of evaluation for online coursework. Research on testing via computer goes back several decades and suggests that for multiple-choice tests, administration via computer yields much the same result as the pencil and paper format (Russell & Haney, 2000). According to Schwartz and White (2000) feedback to distance learners should focus on specific behaviors; be oriented toward informational needs of students; be clear, concise, and timely.

Testing online is a logistical challenge for EDE. However, many students expect an EDE course to be completely online and are frequently surprised to discover they must travel to a testing center or set up a proctor at a local college or library. Colleges offering EDE have created partnerships with other colleges in students' local areas to shorten the travel distance. For many, however, this negates the reasons for taking EDE coursework – convenience, busy lifestyles, physical
limitations. Today, colleges are meeting this challenge in a variety of ways. For example, in Texas 22 colleges and five libraries are collaborating to make proctored tests more convenient. They are establishing testing centers that will be available to students taking online courses from any member institution. The partnership is also building a Web site that will direct students to testing centers in their local areas. Furthermore, the National College Testing Association coordinates a consortium that serves as a referral service to students seeking proctored testing for EDE. The consortium has 187 members in 42 states (VCT Statewide Online Testing Project, 2001). Students question why they can't take the test as they do the rest of the course – via the Internet. One reason is that accreditation agencies have questioned unproctored testing and its role in the larger issue of identification and security issues of distance education.

Students attending the Bachelor's program at Kennedy-Western University in Wyoming receive custom computer-mediated testing software when they enroll. When students are ready to take a test, they download it from the Student Services Web site. When the test is completed they return it to KWU via computer, and it is graded automatically (Kennedy-Western, 2000a).

Still, many professors insist they need someone to verify the identity of the online student. This is particularly important since the new technology makes borrowing, cheating, and plagiarism easier than ever. Mason calls for a rethinking of assessment procedures (Carnevale, 1999a; Web Tools, 2001). To assist practitioners in online assessment a number of companies have developed online assessment tools such as eZ.exam (Pearson Publishing, 2001) to simplify the process for the college.
While the paragraphs above have discussed individual assessment, an interesting facet of this area is programmatic assessment. Students at Western Governors University (WGU) aren’t required to take courses (Carnevale, 2001a). WGU offered its first courses in fall 1998 (Surfing the Net, 1998). To earn the degree, students pass a series of assessment inventories to measure knowledge. The assessment system at WGU is intended to measure the student’s competency in specific subject areas.

A similar model with a different intent is used by the University of Phoenix Online. In a system modeled after successful classroom offerings, cohorts are assessed prior to and after the program to measure how much students have learned and to evaluate courses (Carnevale, 2001a). While WGU and University of Phoenix Online are among the most visible, many others are following this model. These include Excelsior College (Regent’s College) in Albany, NY; Pennsylvania State University’s World Campus; Thomas Edison State College in Trenton, NJ; State University of New York’s Empire State College; and the University of Maryland’s University College.

The SREB has taken a broader approach to online assessment tools and provides a guide to learning sequences needed, placement services, and such job specific information as Work Keys (Southern Regional Educational Board, 2001).

Seven years ago, a new standard was set for service online, when free, comprehensive, and individualized college entrance test [ACT, SAT] preparation was made available with the intent to “level the test playing field for all students” (Zuberbruhler, 2000, p. B11). Since that time more than four million have accessed the service.
Tutoring. Distance learners have many of the same needs as students attending the traditional classroom. One such need is where to find information and assistance in a given subject. As a result, most colleges have tutors available to assist students in a variety of subject areas. As early as 1993, Laurillard (p. 162) wrote, “tutoring systems would be the acme of all educational media, if they existed.”

The model of tutoring followed by the Open University (UK) is that of faculty serving as individual guides and translators to students, grading papers prescribed by the course team, and explaining the material through regularly scheduled tutorial sessions (Blumentstyk, 2000d). While tutorial sessions are optional, college officials encourage students to attend. “Tutors are hired under eight-year contracts; many of them professors moonlighting from other universities or professionals in the field of business or social work” (Blumenstyk, 2000e, p. 5). Athabasca University follows a similar model in that a new student is automatically assigned a tutor at the time of registration. It is the responsibility of the tutor to make contact; the turnaround time is guaranteed (Feemster, 2001a). Tutors staff a call center where they answer questions on a variety of discipline-specific courses.

Most community colleges lack the resources to follow the same model provided by the Open University (UK) and Athabasca University and as a result have partnered with software publishers in an attempt to provide services. Only a few colleges, however, have developed and made available tutoring services online. WebCT, an online learning company, recently purchased mathforum.com from Swarthmore College to provide resources for students and teachers of all levels (Carnevale, 2000g). WebCT plans to use this site as a model for other services in such
subjects as biology, history, and English. California State University is using an interactive multimedia mathematics software package to assist students in developing skills for math coursework. Cal Poly (Olsen, 2000a) tracked 271 students enrolled in a pre-calculus course and found those who had completed an intermediate algebra class online were more successful.

Brainfuse is a Web site that offers students unlimited instant access to qualified tutors (FYI, 2001). Students can communicate with their own personal tutors by typing messages, drawing on a virtual blackboard, and speaking over the Internet. This requires a monthly fee and currently targets specific fields of study. Pearson Education and e-College have joined forces to provide a one-stop, cost effective program for delivering online services including online study guides and assessment databanks, as well as lecture resource material and media (Pearson, 2001). A similar program limited to software training, and currently the most inexpensive of the self-paced tutorials, is offered by ZDNet University. For $4.95 monthly, students have unlimited access to self-paced tutorials in a variety of computer applications (Phillips, 1998).

The Institute for Distance and Distributed Learning offers an online writing lab (OWL) for all Virginia Tech students (2000). Virginia Tech thereby offers three innovative programs: the Grammar Hotline, a self-help environment, and an electronic tutoring environment. A commercial product, Criterion Online Writing Evaluation, is available to colleges for a per-student fee (Students Tools, 2001). This Web-based service allows students to get immediate feedback on writing samples they submit. It is designed to supplement writing instruction by giving learners the
opportunity to practice writing and to receive reliable feedback. Each student receives a score with descriptive information, a numerical ranking, and explanatory remarks about strengths and weaknesses of the paper. A similar service, CritiqueMe.com, is an online version of the writing-tutoring service provided by college English departments. Unlike college-run writing centers, the online service charges students for reviews of their papers. This service was started out of frustration with the writing department where one had to make an appointment one week in advance (Carlson, 2001b). Recognizing that not all students begin their assignments in a timely fashion, the service offers three-hour rush jobs for an extra charge.

An interesting aspect of portal technology is that it can be institution-independent, provides a service directly to students, and allows students to study at any time of the day or night (Eisler, 2000). A number of such virtual tutorials now exist online. Study 24-7.com and Tutor.com are two examples of this approach. Another such company, Smarthinking.com, provides real-time academic assistance to educational institutions. This provides both traditional and non-traditional students with the option to get help from a tutor via the Internet when home institutions’ learning centers are not available (Susman, 2000). Burke Smith, founder of the online tutoring company Smarthinking.com, claims the company “has deals with more than fifty colleges and universities to provide students with tutoring and is also working on the Army’s distance learning project” (Carr, 2001, p. 1).

Another online source of tutoring is Education Planet. This Web site provides students with the opportunity to select a tutor within a pay scale and within driving distance and to participate in individual or group tutoring (Education Planet, 2001).
Another provider of online tutoring is the International Tutoring Foundation (ITF) for which students pay an hourly fee. Training in tutoring services is provided by ITF; new tutors serve a probationary period; and the correspondence is monitored and feedback provided by the monitor (ITF, 2001). Interactive Business Research, a virtual service provider of business research tools and training to the corporate world, has announced a co-publishing agreement with the University of Southern California's Marshall School of Business and the Marshall Libraries. The partnership is designed to develop and market a series of online business and financial tutorials. The tutorials will be authored by local business experts and class-tested with the Marshall School's MBA students (Benjamin, W., 2001).

In May 2001, a national Web initiative was launched in Britain offering free online training in Internet skills. It was designed to teach users how to find online information in discipline-specific areas (Birchard, 2001a). Called the Resource Discovery Network (RDN) Virtual Training Suite, it is a collaboration between 30 universities providing 40 "teach yourself" tutorials on the Web (Fryer, 2001).

Community Support Services

These services are labeled “community” support, in that they provide services not only to students and prospective students but to the community as well. Services include the directory of services; library services; job placement; athletics, particularly intramurals; alumni services; health services; and the bulletin of events. The intent of this category is to provide administrative services not only to students and prospective students but also to the general public (Namm & Holly, 2000).
Alumni Services. Many community colleges fail to develop and utilize alumni services in quite the same way that universities do, so there is limited literature on alumni services via technology. The Internet has provided an opportunity for colleges to contact alumni as well as prospective students. Alumni can stay connected to the institution online and, more importantly, the college can retain its relationship with its alumni. This relationship can result in past students becoming future students by enrolling in additional courses, for training opportunities, or for advanced degrees. Many institutions, including Slippery Rock University and the University of Alaska Anchorage, notify alumni of upcoming events that might be of personal or professional interest (Carr, 2000f; Alumni Publication, 2001). The alumni networks formed via the online community will promote themselves, generating more communication, improving the experience, and fostering lifelong relationships with each other and the institution (Henderson, R., 2000).

Athletics. Taking the idea of a virtual university to the next level, Virtual College Sports, a fantasy sports league, is providing online schools with virtual athletics (Virtual Sports, 2000). In the summer of 2000, the Kentucky Virtual University started the league to build team spirit among fledgling distance learning institutions. Five other colleges are participating – Magellan University, Michigan Virtual University, Old Dominion University, New Hampshire College, and the University of Texas TeleCampus (Virtual Sports, 2000; Young, 2000d). The KVU sent e-mail messages to students, asking for volunteers for the team. Response was greater than anticipated. KVU received resumes from students describing their previous football experience who hoped to win key positions. Despite the enthusiastic
response, this level of interaction with online college sports is unusual and not anticipated to be seen as an essential core support service to EDE.

Chat Rooms and Study Groups. Communication among off-campus students is difficult. Providing opportunities for students to communicate with each other is even more difficult to do effectively. Although many colleges have well designed Web pages they do not update the Web sites frequently and so do not meet the needs of currently enrolled students who use the sites for current information. Some colleges have instituted online chats to provide a way for distance learners to communicate with instructors, college personnel, and each other. Chat forums are real-time text-based communication between individuals or groups (Nelson, 1998). However, many EDE students do not use the chat rooms because chats occur at fixed times and eliminate the “flexibility” that is part of the appeal of distance learning (Carr, 2000g). “It turned out to be more of an office hour where students asked questions about what would be on the exam,” stated Mohammed Fatehi, professor in telecommunications management at Stevens College in New Jersey (Carr, 2000g).

Academic institutions, on the other hand, are discovering the value of interaction and collaboration for students as well as for faculty (CLHE, 1999). Listserve subscriptions, chat rooms, and moo’s have all contributed to extending the reach of learning beyond the classroom. This has fostered collaborative learning within EDE. Ingerman, Nicolson, Daly, and Betlej (1996, p. 17) indicated that “... the Internet and the World Wide Web, which have catapulted distance learning into virtual learning communities, have become an essential tool for teaching, recruitment, internal campus communication, public relations, and campus administration.” “Online
communities will grow from text-based chat rooms to three dimensional real-time realities” (Holmes, 1999).

As many as 110,000 students now communicate regularly at the Open University (UK) through more than 16,000 computer conferences online. Two thousand of these are moderated by students through the student association (Daniel, 2001a).

Building on the concepts of chat room and portal technologies, Mascot Network, a software company, has designed a student portal that provides students with information about college events and enhances communication among students. Chat rooms are established for members of student clubs and organizations to provide for interaction and to become connected on campus (Nielsen, 2000). Current announcements give students information about deadlines, programs, and activities. Current scholarships, financial aid deadlines, dates for club activities, and athletic events and scores can be posted on a regular basis.

Kennedy-Western University in Wyoming has created a virtual student union that allows students to electronically visit and meet fellow students (Kennedy-Western, 2000c). It is a place to form study groups and share professional thoughts with others who have similar interests.

Another service provided by Kennedy-Western University is virtual office hours for faculty. Using the latest technology, it allows students the opportunity to post messages to faculty and permits interchange with faculty and fellow students. It also provides real-time audio that allows the advisor or faculty to talk with students over the Internet (Kennedy-Western, 2000b).
Career and Placement Services. The main objective of career and placement services is to provide the opportunity and resources for each student to move from school to work. This objective may be supplemented by occupational cooperative work experiences, including part-time employment as well as practical, meaningful professional experience that relates to the student's major. Additionally, most career centers maintain an employment database and job bank and make job referrals (WWCC, 2001). A number of colleges are currently providing these services electronically. One such example was the Virtual Career Fair held by Oregon State University from April 30 through May 4, 2001 (Virtual Career Fair, 2001). Another Oregon college, Linn-Benton Community College, has taken the concept one step further and has created Career Planning Online, an interactive, Web-based program (Linn-Benton Community College, 1999). This program was the winner of the 1999 NCCET Exemplary Program Award in Distance Education.

Another resource available online is ReadyMinds, an interactive program available through Peterson's online resources to provide one-to-one career counseling to college students. Nationally certified counselors work with students to determine strengths, preferences, and values to create an individualized career plan (Velocity, 2001).

Health. The first American college to provide for the health care of its students was Amherst College in 1860. Over the years, many colleges have developed arrangements with medical visitors, though it wasn't until 1901 that University of California at Berkeley organized a general medical service (Patrick, 1988). Recently, the University of Alberta brought health care education to a new level via the use of
online technology. Judy Hancock, a health educator at the University of Alberta, draws visitors to the university's medical site with catchy titles and graphics (Paskey, 2000a). The series includes programs on AIDS, alcohol, birth control, eating disorders, and sexually transmitted diseases, all available online. For students without access to a computer, there are health kiosks on campus.

"Outside the Classroom" is marketing an interactive program on alcohol awareness, free to colleges (Carr, 2000e). At Washington and Lee University, it was offered as part of freshman orientation. Kaufman, the university's health director, reported the "impersonal nature of the online medium may be a boon for such a program" (Carr, 2001). Also, because today's college students are comfortable with the technology and adept at finding information online, more are likely to use the service.

Library Services and Resource Center.

If there is one institution on a college campus that has never faced outside competition, it is the library; the library has been the only game in town. Until now. (Feemster, 2001b)

With the growing demand for distance education, adequate library access is an issue garnering increasing attention. Library resources are a crucial component of education, whether it takes place online or in the traditional classroom (California Virtual Library, 2000; Interinstitutional Library Council, 1995; Virtual Library, 2001). Campus-bound institutions have distinct advantages with such facilities as libraries and laboratories when it comes to learning by doing (Ehrmann, 1995). The campus-bound institution offers exclusive access and has control over these facilities, whereas it does not in the use of electronic library resources and materials.
Electronic information isn't just a new medium but a whole new way of doing business. No longer does a student stroll through cavernous reading rooms, seeking the card catalog, and the periodical room is now filled with computer terminals that have full access to online journals. (Feemster, 2000, p. 26)

In the age of online learning, more students are using the Internet for academic research. They need more than just courses that are accessible from the Internet; they need books and research material—and someone to explain where to find them (Carnevale, 2000d; Strategic Plan, 1997). “Online libraries are essential for online students” states Meredith Leahy, Dean of Liberal Arts at Regents (Online, 2000, p. A45). Services that are available online include the ability to reserve books and to utilize interlibrary loan. Also available are links to World Wide Web sites that provide information on a variety of topics, including Internet policies, copyright criteria, and professional resources. Current technology, furthermore, will allow library patrons to check out books online (Chronicle, 2000).

Librarians are emerging as key figures in making distance education work. They stand between the instructor, who has information to impart, and the student, who needs access to that information (Insight, 2000). The transfer from paper to digital file created a conflict between publishers and libraries—fair use laws were inadequate to support the new standards and technologies available. Librarians in America responded by creating a consortium and using their increased bargaining power to negotiate new deals with publishers. This action allowed library services to offer full access to digitized databases, search functions, full-text documents, interlibrary loan, and online help. The consortium resulted in lowered prices and
closed the gap between the "haves and have nots;" it has also made it difficult, however, for a single library to negotiate effectively with publishers (Feemster, 2000).

Similar work was taking place in Europe at nearly the same time. In connection with a study on Open Distance Learning, the Commission for Research and Development Information Services (CORDIS) held a workshop in Luxembourg to review the recent developments in access and in "giving increased focus to the libraries sector" (CORDIS, 1995, p. 1).

Adequate access to good library facilities is a criterion that applies to campus-based courses and, consequently, is as important to distance learners. Unwin (1994) reports that distance learners wish to see themselves as "real students" and that using the library is regarded as an important component of the authentic learning experience. Stephens et al. (1997) suggest that even when courses do not seem to expect students to use libraries, large numbers of students feel the need to use them. The Open University (UK) has addressed this critical issue to student learning via the electronic library (Salmon, 2000). The number of articles accessed online at the Open University (UK) has risen from 15,000 in 1997 to nearly 80,000 in 1999 (Daniel, 2000).

One method of dealing with the issue of library resources, practiced by the Open University in the United Kingdom, was to relinquish responsibility to other libraries (Stephens, Unwin, and Bolton, 1997). The Open University (UK) arranges for course documentation to be available to students at local libraries (Daniel, 2001b). The university library, which used to focus on serving the needs of the faculty for course development and research, now concentrates on providing students electronic access to databases and documents. Faculty and librarians are developing a service that selects
and keeps up-to-date documents relevant to online coursework. The number of times students accessed the documents using the technology jumped from 60,000 in 1999 to 176,000 in 2000 (Daniel, 2001a).

A number of companies are attempting to undermine the library's entrenched position on campus and off. None intends to replace the library, but all are positioning themselves to offer supplemental services of digital content that colleges do not provide (Feemster, 2001b). Some of the services are simply time-savers. For example, when a student excerpts material from an e-book, Questia's system delivers the footnote and bibliographic entry automatically (Feemster, 2001b). Topical research guides by JonesKnowledge steer Web users to content from arts databases to government documents and are designed, maintained, and updated by a staff of librarians. Libraries might outsource this work usually performed by research specialists. Questia runs a subscription service that bypasses both the library and faculty in pursuit of direct connection with students (Feemster, 2001b).

Blumentstyk (2000a, p. 1) describes another method of providing information as "a Web site that sells books, dissertations, legal documents and other material with an intellectual bent." The site works like a library catalog, allowing customers to search for resources on particular topics. An eclectic list of books, dissertations, historic speeches, and other relevant material can be viewed for a price. The site also carries advice to readers from academic experts on a wide variety of topics. However, one disadvantage of this method has recently come to light: Canadian scholars are concerned with the "privatization and commercialization of university research" (Blumenstyk, 2000d, p. 1).
Another option destined to “transform how academic research is done” is to charge students a subscription fee for the services (Blumenstyk, 2000c, p. 2). One such company, Questia Media, has more than 50,000 scholarly books and journals in its electronic collections and will have five times that many by 2003. Their fee is $360 annually for the service but also includes search capabilities by keyword, ability to copy the material to the personal computer electronically, and creation of footnotes automatically.

“Many colleges offer specialized services such as the medical digital library. This service allows medical schools around the country to pool information and make it available to medical students, undergraduates in pre-medical programs, students in other allied health fields and practicing physicians” (Mangan, 2000, p. 1). This system has generated a number of concerns, including whether it is the first step to dictating a common curriculum for medical schools and what impact the medical database will have on how students interact with patients (Mangan, 2000). Modern Library offers more than 100 works of classic literature in electronic form (Bringing Classics to the Masses, 2001). Some faculty members have created virtual libraries of their own, based upon subject matter. One such example is the Milton ReadingRoom, created by T. H. Luxon, a professor at Dartmouth College. The room contains full hypertext versions of Milton’s work and has an extensive bibliography of Milton criticism, as well as links to numerous resources that students can access in their pursuit of knowledge about Milton (Ludwig, 2000).

The most recent development of library services is by Harcourt e-Learning. Harcourt offers its online library services to academic institutions for a per-user-
licensing fee. It features information in all major subject areas, including history, literature, philosophy, health care, business, education, humanities, and information technology (Department of Education Report, 2001). In addition, Harcourt e-Learning Online Library also includes guidebooks to help with online research, including *How to Use the Web, Evaluating Information on the Web,* and *Citing Electronic Resources.*

An exemplary model of the virtual library has arrived with the recent accreditation of Jones International University (JIU) by the North Central Association of Schools and Colleges, after meeting rigorous standards. D. S. Helfer (1999) reported that JIU worked with several academic librarians to identify five core services provided to students in traditional academic settings: bibliographic instruction, reference and research, document delivery, interlibrary loan, and electronic database searching. JIU has assembled more than 500 of the best Internet-based research tools, organized by broad category and then by topic (Helfer, 1999; Institute for Distance and Distributed Learning, 2000). This service also contracted to create topical pathfinders to both print and Internet-based electronic resources. Moreover, the library contracted with an experienced academic librarian to provide e-mail-based reference and research assistance to its students.

Since many remote students see time constraints as one of the challenging aspects of taking college courses, it was imperative that JIU students be able to obtain copies of articles as quickly as possible. JIU responded to this challenge with a number of database services available to students. For those times when the full text document is not available online, students may request document delivery from a vendor, CRTC, with whom JIU has established a relationship. Turnaround time is 1-3 days. One major disadvantage to this is that all document delivery costs are paid by the students (Helfer, 1999, p. 64).
Another option for providing additional educational resources is offered by Pearson PLC, the world's largest educational publisher, which plans an online venture called the Learning Network. Its intent is to bring together assets of the publisher to produce a set of ready-made online course supplements for electronic distance and corporate education (Blumenstyk, 2000d). Another attempt at providing supplementary learning material was attempted by Contentville.com in 2000. This Web site, which sells books, dissertations, legal documents, transcripts, speeches, journal articles, and scholarly research, met with controversy from instructors and writers of dissertations. Faculty members were concerned about plagiarism, and students were concerned about the use of their research within copyright laws. Many of the issues have been resolved, though the site is less active than it was when it was first developed and made available.

A recent venture by the netLibrary Web site allows students to read eBooks without being connected to the Internet (Textbooks Become More Interactive, 2001). The software to do this is free, and a selection of American Library Association titles was made available as eBooks through netLibrary. In an effort to make eBooks more accessible, netLibrary will allow direct links from the online public access catalog to preview and check out functions of netLibrary (netLibrary, 2001).

Another interesting endeavor in progress, designed to provide access to librarians' services, is a consortium of colleges to "support a science chat room staffed with reference librarians 24/7" (Susman, 2000, p. 3). Colleges include Oregon State University, University of Texas, University of Arizona, and the University of Hawaii, in collaboration with Carnegie Mellon and the National Science Foundation. Virginia
Commonwealth University and Old Dominion University have also developed and implemented an innovative strategy in library access and service. Librarians describe the service as the virtual equivalent to the library’s new-book shelves. Students receive e-mail messages with information about new books, films, dissertations, and other materials that match their interests (Olsen, 2000d).

Two of the nation’s largest digital libraries – the California Digital Library and the Library of California – have formed a partnership that will broaden access to the state’s collection of public databases and digital archives (Olsen, 2001c). Services will include using the Internet to offer online reference librarian services 24 hours a day, seven days a week. Using specialized remote-control software, an online librarian will be able to see the users’ screens and guide them to the material they seek and to access primary research collections. This will facilitate the creation of a data warehouse for accessing and analyzing government-produced data on population, housing, health, crime, the economy, education, and the environment.

In addition to the traditional services, many libraries offer a class to introduce students to Internet research. Courses are designed to “introduce students to the use of the Internet as a research tool. Includes developing a search strategy, limitations of the Internet, types of Internet information resources, Internet search tools and searching techniques, and evaluating Internet information resources” (Chemeketa, 2001b).

A growing number of institutions are also providing online resource centers for distance learners. MindLeaders Education Services Department promotes one such example. “The site is designed to be full of ideas and information to help you in
administering your training program. It contains sample student handouts, how-to instructions, marketing flyers, emails, and a host of other tools that will be helpful” (Fredland, 2001).

**Student Governance.** According to the literature, few colleges have invested time or money to electronically deliver a reasonable facsimile of student governance. This service has the potential of building community and providing opportunities for interaction with the college, as well as access to more personalized services.

Washington State University provides one of the most innovative online services. It has one of the few student governments for online students in the nation (Carnevale, 2001j; Kendall, Moore, & Smith, 2001). This service provides the opportunity for students to discuss university-related issues and participate in institutional governance. Meetings are held online in chat rooms. All students are welcome to visit and interact in the meetings. The president has an office hour each Monday; she answers e-mail from students who need help either with finding information or with academic advising. Events are not limited to cyberspace; the organization recently sponsored a face-to-face meeting for members to meet with career counselors and other advisors (Carnevale, 2001k).

**Technical Support.** The support service crisis is most visible to technology support personnel. The gap is widening between the level of support services available and the expectations of faculty members, administrators, and students (Gilbert, 2000c). Students should be provided with opportunities to assess their suitability (competencies, interests, learning styles) to perform adequately in a distance learning environment before enrolling (Oregon University System, 2001). Students should be
informed of technical requirements and the level of computer competency necessary to access distance learning courses and services.

Colleges are extending the hours in which they provide technical support for distance education, offering late night, weekend, or even around the clock services. “The concept of twenty-four hour, always open education has been slower to evolve in our [education] culture than in the corporate culture,” stated M.B. Susman, chief executive officer of the Kentucky Commonwealth Virtual University (2000, p. 2). If the college is creating anywhere, anytime education, the support services must also be provided at the same times and in similar formats. Susman also indicated that “if [education] continues to treat electronic delivery as add-on, supplementary pieces of our work it will always be expensive” (2000, p. 3). Fortunately, there are a number of ways to provide this level of service.

One option is for the institution to commit the resources. “Besides the human resources, you have to be sure there are people there looking after the hardware,” stated M. B. Susman (2000, p. 3) at Colloquy Live, an event sponsored by the Chronicle of Higher Education. This is a very expensive proposition for every college to undertake. Therefore, another option is to outsource, as the Kentucky Commonwealth Virtual University has done (Susman, 2000). The company provides the service, deals with the headaches, and can offer it affordably to the clients.

A number of colleges provide students with a list of equipment that describes the hardware and connectivity requirements, along with a browser test. Many also provide a simple self-evaluation exam that helps assess students' level of motivation and readiness (Susman, 2000). Another component is student orientation to the use of
the site and software, designed to help reduce the need for the helpdesk; timeliness of response is a critical component of technical support.

Weber State uses a technical support tracker that provides a method for seeking technical support during non-office hours. The system is accessible from the course schedule page; technical assistance is requested by selecting the problem area from drop-down menus and typing a detailed message. The program sends messages to the staff responsible for each area; students usually receive a reply within 24 hours (Smith, 2001a).

Another consideration to be addressed is the costs paid by distance learners. Many colleges charge them for parking, sports events, health care, athletics, and even a transit fee for the bus system. As online education expands, distance learners are becoming more discerning about the charges they will pay, forcing colleges to reconsider some of their fee structures (Carnevale, 2001). Many colleges charge the same fees for on-campus and off-campus students. When a student lives hundreds of miles away, paying fees for campus services becomes a source of great discontent.

Distance Education

While a number of definitions of distance education have developed over time, the fundamental concept of distance education is that student and teacher are separated by distance and, sometimes, time (Dalhousie University, 1995; Moore & Kearsley, 1996; Western Cooperative for Educational Telecommunications, 2001). Sayers (1996) indicates that the distinction of distance is not only in reference to geographic separation but may be due to social, economic, and physical barriers. An
example of a non-geographical separation may include an inability to overcome the
time constraints imposed by traditional college schedules due to family commitments
or work schedules (Kuntz, 1999).

Distance education was first and foremost a movement that sought to extend
the traditional college and to overcome its inherent programs of scarcity and
exclusivity (Matthews, 1999). Secondarily, distance education was developed as a
creative political response to the increasing inability of the traditional structure to grow
larger.

Distance education is not a new phenomenon. Its roots go back to a
newspaper advertisement in March 1728 (Clow, 1998, p. 13) when the *Boston Gazette*
advertised shorthand lessons by mail. In 1840, Englishman Isaac Pittman began
modern distance education by offering shorthand correspondence courses via the
newly established penny post (Clow, 1998; Holmberg, 1986; Phillips, 1998; Verduin &
Clark, 1991). By 1873, American correspondence courses had begun to include the
exchange of comments and grades for women through guided readings and frequent
tests (Holmberg, 1986; Verduin & Clark, 1991).

American collegiate correspondence study began in 1874 with undergraduate
and graduate course offerings at Illinois Wesleyan University and the Correspondence
University of Ithaca, New York. In 1883, New York State authorized Chautauqua
College to grant degrees for completed correspondence coursework (Baker, 1997;
Moore & Kearsley, 1996; Watkins & Wright, 1991). In 1890, the Colliery Engineering
School of Mines, based in Wilkes-Barre Pennsylvania, began to offer a home study
course on mine safety. Colliery Engineering College soon began to offer other courses
and became the International Correspondence School (ICS). These courses were precursors of a "permanent" university level program begun by William Rainey Harper, who is called the father of American correspondence study (Clow, 1998; Garrison, 1989; Pittman, 1990). By 1909, the states of Oregon, Kansas, Texas, Nebraska, and Minnesota had also established correspondence courses (Watkins & Wright, 1991).

The scope of distance education exploded with the technological developments of the World War I era (Clow, 1998, p. 14). Radio stations such as WHA, the first station federally licensed for educational broadcasting, preceded educational television broadcasting. Although begun in 1932, college telecourses were not offered for credit until 1951 by Western Reserve University (Clow, 1998). During the 1940's and 1950's, instructional television emerged as a tool that allowed schools to use this new approach to teaching (Thomerson, 1995). Also, during World War II, American troops used training films and correspondence courses from Pennsylvania State University (Glitrow, 1989).

The use of telecourses spread rapidly with the advent of satellite technology in the 1960's. In fact, the late 1960's and the early 1970's brought critical change to distance education through experimenting with new media and new instructional techniques. In the 1970's the increasing availability of telecommunication satellites provided the means for expansion of educational television services throughout the world.

The two most important developments of this era were the University of Wisconsin's Articulated Instructional Media Project (AIM) and Britain's Open
University. The purpose of the AIM project was to find ways of joining (articulating) various communication media for teaching off-campus students (Gooch, 2001, p. 8). A stated purpose was "to effect change at every level of the academic hierarchy, in every process dealing with the adult part-time learner, so the very special learning needs of such off-campus students will be met" (Gooch, 2001, p. 7). The AIM experiment was based on the assumptions that the articulated instruction approach was necessary so that more people could continue their education, that an articulated program would conserve funds and faculty time, as well as broaden and enrich learning opportunities. It was further assumed that a non-resident student could earn credits that would compare favorably with those accumulated by a resident student and, given faculty and administrative support, that a non-resident student could earn a degree in a special major program. So, in essence, AIM not only offered individual courses but was also designed to be an off-campus degree program (Gooch, 2001, p. 8). AIM experienced some successes and numerous problems before the project was terminated in 1969. "On the plus side," AIM's co-director Najem recalled during a 1992 interview, "many of today's extension programmers are now using the 'high tech' communications systems that were promoted by the AIM staff to introduce distance learning." Educators in England and Australia also adapted AIM concepts.

In 1967, the British government set up a committee to plan "a revolutionary new educational institution" (Daniel, 2001a). The new educational institution, called the Open University, was set up for a number of reasons. "Harold Wilson, its political founder, had two aims. He wanted to open up university study to the many adults who had not been able to access the restricted university system in the UK of those days.
As an academic himself he also wanted to open up the work of the university to public view" (Daniel, 2001a).

The OU planning committee insisted that, although the institution might work in new ways, its quality would be as good as the best universities in the land. All these aims were brought together in the speech that the first Chancellor, Lord Crowther, made at the OU’s inauguration in 1969. By declaring that the Open University (UK) would be open as to people, open as to places, open as to methods and open as to ideas, Crowther gave the institution a mission statement that inspires it to this day. (Daniel, 2001b)

In 1968, Charles Wedemeyer of the University of Wisconsin-Extension went to England to design a degree-granting university with a full degree program. It was to be a nationwide university system with no resident students. It would “employ the fullest range of communication technologies to teach a full university undergraduate curriculum to any adult who wanted such education” (Daniel, 2001b).

Distance education, starting with the Open University, has a long history of servicing isolated and remote learners (Matthews, 1999; Stubbs & Burnham, 1990). Moore (1990) described the resulting development of the Open University (UK) in 1971 as the “second milestone in the development of modern distance education” (p. xvi). OU changed “the social perceptions of what higher education was for,” says Peter Scott, vice chancellor of Kingston University near London (Blumenstyk, 2000e, p. 2). The Open University (UK) is the world’s largest online university, enrolling more than 220,000 students annually and is currently recognized as the most successful model for distance education (Baker, 1997; Daniel, 2001a; Moore & Kearsley, 1996). One hundred and eighty thousand students are pursuing degrees; another 140,000 are enrolled in continuing education courses. Seven thousand
students with disabilities are enrolled in the Open University (UK) (Daniel, 2001a). Quality of instruction and services of the Open University continues to rise. In 1992, the Open University (UK) was 33rd, four years later 29th in the quality of the programs in the top universities in England. Today, the Open University (UK) ranks in the top ten universities in Britain; its engineering program ranks higher than those of Oxford and Cambridge (Daniel, 2001a).

At the same time the Open University (UK) was opening its doors, Athabasca University (CAN) was also opened in the province of Alberta. Athabasca was not originally conceived as a distance learning university; it was founded as a campus-based college to meet increasing enrollments. But because enrollments decreased sharply before the campus was built, the province initiated a pilot project in distance learning instead. Unlike other universities, however, where distance education is viewed as an outgrowth of new technologies, Athabasca sees it as a delivery strategy grounded in student services (Feemster, 2001a). The emphasis on service is apparent from the student’s first contact – usually by telephone fielded by the call center. The center answers questions about how to get an information packet and queries on prerequisites, test proctoring, and exam results (Feemster, 2001a). Athabasca has grown at 25 percent per year for the past several years. Ninety percent of its student population is working full-time, and 75 percent is over 25 years old (Feemster, 2001a). “If you can’t provide student services the same way you provide your courses, don’t do distance education,” advised Alan Davis, vice president for academic affairs at Athabasca. Students need support beginning with good information and advice.
In 1980, the first U.S. educational satellite system, Learn/Alaska, offered six hours daily of instructional television to 100 Alaskan villages (Sponder, 1991). In 1985, the Indira Ghandi National Open University (IGNOU) was established to democratize education in India (Distance Education, 2001). By 1986 the Mind Extension University (MEU) was broadcasting into 23 million homes and being carried by 767 cable systems. The following year, MEU began cable casting (Kuntz, 1999, p. 7). Since that time distance education has been used to expand student access to higher education by duplicating and distributing conventional programs and services from centralized campuses to outreach centers (Baker, 1997; Blumhardt & Cross, 1996; Brown & Brown, 1994).

Distance education started with the written word; it enhanced the written word, but its greatest technological advantage is to communicate across time, space, and geography (Roberts, 1999). “The biggest change and the greatest impact of technology will be in the shift of power from the institution to the student,” reported Mary Sorenson (Sorenson & Birkholz, 2001). Technology continues to drive students’ consumer behavior: 43 percent own cell phones; 75 percent own personal computers, of which 22 percent are notebooks; e-commerce totals $1.2 billion annually; 36 percent of students spend more time online than they did six months ago (Moneta, 2001).

“While some institutions are counting on distance learning to supplement revenue sources, others understand the value of distance learning as a way to engage the college with a broader constituency of individuals and organizations” (Miller, 2001). EDE has revolutionized how students work, think, and access information
Peck & Dorricott, 1994). For distance learning to be successful, however, three important components must be present: access to course content 24 hours a day; access to teachers on a regular basis for interaction and help; and access to classmates for group interaction and collaboration (Deming, 2000).

In addition, a virtual learning community is not confined to a particular space or time as evidenced by conventional college course offerings. In education the computer is used as a stand-alone tool when a student reads text, listens to sounds, and views pictures stored in a program on disk or CD-ROM. Computer networks link personal computer systems with the telephone system. An instructor prepares instructional material on her or his personal computer and transmits it to students anywhere in the world through the Internet. A computer conference can be conducted in real time or asynchronously by e-mail or bulletin board (Moore & Kearsley, 1996).

Proponents of distance education have suggested it provides access to under-represented students (i.e., those who lack access to higher education) (Baker, 1997; King, 1995). Distance learning overcomes limitations of time and distance, allowing students to take courses from accredited colleges anywhere in the world (Borchardt, 1999; Saba & Twitchell, 1988). Others suggest that incompatible class times, heavy course loads, and jobs are some reasons students choose distance learning as an option in continuing their education or professional development (Borchardt, 1999). Still another reason for EDE programs is the opportunity for students to become fluent in the technologies they expect to use more often in the workplace (Gunn, 2000).

Good-quality distance education is becoming an option for certain kinds of learners and learning and for instructors. Delivery of education and training through
distance learning has opened new opportunities for higher education and training of
the workforce. Changing technologies will remain a persistent factor in higher
education; these changes can provide opportunities for life-long learning, economic
growth, and service to the community workforce (Slusky, Yampolsky, Patow, Dubina,
& Goldfarb, 1997). Today, approximately 13 million people participate in online
distance learning according to Donald Perrin, managing editor for Education at a
Distance, the official publication of the United States Distance Learning Association
(Thomas, 1999).

Electronic Distance Education

Just as the expansion of mail services made correspondence courses possible,
recent developments in modern telecommunications technology have provided
modern distance education with video teleconferencing using satellite, audio, and
computer teleconferencing; microwave, cable and telephone lines; and the Internet
(King, 1995). Furthermore, computer telecommunications are playing an increasingly
important role in regional, national, and international distance education efforts
(Moore & Kearsley, 1996).

In fact, computers have changed the look and feel of, as well as the delivery of,
education (Assuring equitable access, 1995). The history of computers in education
began more than 50 years ago with the use of the MARK 1 at Harvard and the
production of the ENIAC at the University of Pennsylvania two years later (CLHE,
1999). The eight-inch IBM floppy in 1971, the 8-bit microprocessor in 1974 and the
first portable computer in 1976 followed. The 1970's brought the development of the
first 16-bit processor, followed by the standard memory and the keyboard, for an
affordable price of $600 (CLHE, 1999). However, in 1983 computers were still mostly used by science and engineering students.

Though the Internet was in existence as early as the 1970's, it wasn't until it was linked with public and commercial networks in the 1980's that growth accelerated (Daniel, 1996). In 1989, Tim Berners-Lee developed the World Wide Web to allow global information exchange across the Internet to allow scientists to collaborate on research (Roach, 1999b). The year of 1994 marked the release of Netscape Communications Navigator 1.0, the device that provided introduction to the World Wide Web for the general public. Since 1995, the World Wide Web has further facilitated the adoption of the Internet for teaching and learning and has opened doors in all sectors of society and economy (Distance Education, 2001). In 1997, 19 million Americans were using the Internet; by 1999, that number surpassed 100 million (Lebo, 2000): Interactive cyberspace had attracted an enthusiastic audience. No communications medium of consumer electronics technology has ever grown so rapidly (Daniel, 1996). As a result, the federal government has actively promoted distance education through enactment of new student aid rules and funding programs (Salomon, 1999).

Between 1984 and 1993, the percentage of people using computers in the workplace almost doubled, from 25 percent to 46 percent (Russell & Haney, 2000). Similarly, the number of people owning one or more computers in their homes increased from 8 percent in 1984 to 23 percent in 1993 to 34 percent in 1997 (Newburger, 1997). In the year 2000 the number of American adults with Internet access rose from 88 million to 104 million (Rakoff, 2001). Forty-five percent of
American children – over 30 million – and 75 percent of those aged 18-29 have
Internet access. Sixty-four percent of middle-income families – those with incomes
between $30,000 - $50, 000 – are now online (Rakoff, 2001).

Much concern has been expressed about the digital divide and the implications
this has for higher education (National Telecommunications and Information
Administration, 2001). However, recent statistics indicate women, minorities, and low-
income families are utilizing the Internet. Thirty-eight percent of low-income families
(less than $30,000 annually) have Internet access, up from 28 percent in June of 2000
(Internet and Education, 2001). Women and minorities are getting connected: 47
percent of Hispanics, 43 percent of African Americans, and 54 percent of women
(Internet and education, 2001). Women tend to use technology in a way that is very
purposeful, encouraging social interaction and connections (Gilcher, 1999).

A key technological innovation has been Java language, which allows writing
small program-applets that reside in the network until needed. “The implication is that
students have access to enormous computing power without investing large sums for
the equipment” (Daniel, 1996, p. 120).

Campus portals were pioneered by UCLA in 1999 and followed by similar
systems at the University of Washington and the University of Buffalo (Moskowitz,
2001). Advancements in software simplify the work involved in building a portal from
scratch, making it more affordable for community colleges. Only about five percent of
colleges have campus portals, but the Gartner Group predicts that 80 percent of U.S.
colleges with enrollments of more than 1,000 will have portals by 2005 (Moskowitz,
2001).
As a result of technological advances, EDE has emerged as a global phenomenon (Baker, 1997; Confessore, 1999; Holmberg, 1995; Moore & Kearsley, 1996). Baker (1997), Brown and Brown (1994), and Crossman (1997) suggest that distance learning is the fastest growing instructional pattern in the world. *Online Distance Learning in Higher Education*, published by International Data Corporation (1999), indicates the number of remote students is growing by 33 percent annually and will reach 2.2 million in 2002. This is a significant increase from the 710,000 in 1998. By 2002, the number of students taking distance learning courses will represent 15 percent of all higher education students, up from five percent in 1998 (Borchardt, 1999).

Society is undergoing a fundamental transformation from the industrial age to the information age (Aman & Bean, 1997). This interest in distance education is partially explained by the projections of significant growth in higher education enrollments in the next 15 years (Academic Innovation Center, 1997; Witherspoon, 1997). Online distance education is expected to generate $1.1 billion in annual tuition revenue from half a million students by 2002 (Gunn, 2000). The projected increases are attributed to several factors. Higher education leaders such as O'Barion (1997) of the League for Innovation in the Community College see a dramatic shift from the traditional provider-centered education to a learner-centered system that is made possible by information technology.

Furthermore, the emergence of a truly global, information-driven economy has placed an ever-higher premium on an educated, up-to-date workforce (Witherspoon, 1997). It is no longer possible to meet the demand for higher enrollments by building
new campuses. For instance, the Oregon legislature has adopted a policy supporting access to higher education to every qualified Oregonian but has also specified that no more four-year institutions be created (Witherspoon, 1997).

Another effort to provide for the needs of students is Oregon Colleges Online, a group of 17 Oregon colleges and two Washington colleges that have worked together for 19 years to provide distance education opportunities to over 198,000 students (Oregon Colleges Online, 2001). Originally, all offerings were delivered via telecourses, but a variety of courses are presently offered via different technologies. Currently, the consortium is offering 68 telecourses, 316 Web-based courses, 22 live and interactive courses, eight classes by mail, 29 videotaped classes, eight independent studies, two multimedia courses, and two CD-ROM courses (Oregon Colleges Online, 2001).

In 1988, the Commission on the Future of Community Colleges predicted that "societal changes are expected to produce growth in the size of the population and participation in higher education for adults, people of color, economically disadvantaged, persons with special needs, and participants in the welfare to work programs" (p. 88). A more recent study by the American Council of Community Colleges, Future Faces of Colleges (April 2000) indicated that many of the changes predicted have come to pass and that such students are being served by community colleges.

Community colleges are pivotal in meeting the expanding needs for post-secondary education (Boggs, 2001; Education Commission of the States, 2000). "State policy makers are looking to community colleges to provide access to increasing
numbers of students, retraining for displaced workers and pre-service and inservice training for K-12 teachers, support for K-12 reform” (Education Commission of the States, 2000). Changing workplace conditions demand that higher education retrain displaced workers and serve the incumbent workforce by upgrading their skills (Drucker, 2000; Sidle & McReynolds, 1999; Workforce Investment Act, 2000; Yoakam, 2001). A growing shortage of prepared workers and increased business focus on competencies have required that community colleges meet the rising demand for “anywhere and anytime learning” (Boggs, 2001). Businesses and industry will require workers that are literate, numerate, adaptable, and trainable – in a word, educated (Wood, 1999).

These additional demands on the physical facilities and reaching capacity in limited classroom space are adding strain to limited resources; thus colleges are seeking low-cost and effective ways to reach students (Phillip Anderson, personal communication, July 1998). With the onslaught of electronic communication, distance education is no longer distant.

Over the past five years the Internet has exploded on to the educational scene as a powerful instructional and student service tool. Whether online or on-campus, Internet technologies are helping students make more powerful connections to learning and institutions build more lasting relationships with their learners. (Milliron, 2000)

“By 2025, traditional universities may be a thing of the past, replaced by consortia of course providers with delivery systems that simply bypass the classroom” (Dunn, 2000). Learning at home or the workplace will become commonplace. The balance of control, from centralized institutions and delivery systems to learners (with access to a networked computer) and decentralized systems, will continue to shift
Higher education is at a point in its history when radical changes are occurring in instructional delivery system models.

Innovations in Web-based instruction have not occurred in isolation; they are "a response to broader social changes that have been brought by information technology" (Miller, 2001). EDE has "recently achieved a level of critical interest that signals a shift from the instructional periphery to mainstream instructional delivery" (Lever-Duffy & Lemke, 1996, p. 1).

Colleges are witnessing a profound increase in the use of multimedia presentations, video teleconferencing, and more currently, Web-based instruction (Daugherty & Funke, 1998). These technological advances have a direct impact on current practices and policies and, therefore, have the potential to alter traditional methods of education. The combination of these technologies has brought unprecedented resources and abilities to educators and students alike (Saba, 1998c).

Few technologies have changed education like the Internet and telecommunications. An undergraduate student can now access a rare collection of artifacts through a Web site offering multimedia files and a collection of indexed reports. Students communicate with each other via e-mail and turn in homework electronically. Scholars around the world join newsgroups to share ideas on a continuing basis. The network has extended the classroom beyond the walls of the institution (Technology changes education, 1995).

Since the printing press was first introduced, there has not been any development that has brought greater revolutionary changes to the education process than computer technology (Slusky, Yampilsky, Partow, Dubina, & Goldfarb, 2000). In the short time the Web has been available, it has had a significant impact on
education. It took 60 years for the telephone to be implemented by 40 percent of the people; 26 years for the television to be in 25 percent of the homes; 15 years for the personal computer, 13 years for the cellular phone, and only seven years for the Web to be implemented by 40 percent of the U.S. population (Kruger, 2000b; Susman, 2000).

"The advantages of time and place-independence, multi-platform capability, quick development time, easy updating ability, learner control, and cost considerations are driving the utility and popularity of Internet or Web-based classes" (Wulf, 1996, p. 31). The new technologies provide greater interactive experience that more closely parallels face-to-face teaching. Modern telecommunications also provide the opportunity to reach students at their homes and worksites (Rogers & Wells, 1997; Sherron & Boettcher, 1997). In other words, the Internet is helping to move education in a new direction (Henderson, D., 2000).

McCarthy-Tucker (1999) reports that computerized tutorials, the World Wide Web, and alternative methods of disseminating information are rapidly modifying course delivery, offering hope of enhancing student learning and motivation. Furthermore, publishers now provide computerized tutorials and multimedia instructional support with most introductory texts, and homepages and electronic discussion groups provide new opportunities for class interaction. This quantitative study investigated the choice students made when offered a variety of traditional and non-traditional instructional options. Acceptable options included computer-assisted instructional activities, quizzes, community service, study guide completion, puzzles, written assignments, and in-class activities. Results suggest that students most likely to
choose electronic options were young Anglo-American males and Native American students. Those least likely to choose electronic options were older Hispanic females. A recent study by the American Association of University Women (AAUW) (2001) concludes, moreover, that women who take distance education courses face substantially more challenges than men do in distance learning. The report, entitled Third Shift, states that distance learning often adds another layer to a woman’s workday: the first shift is work; the second shift is homemaking and childcare. But the study also indicated that many women are seeking online degrees, not just taking an occasional course. Lucek (1995) suggests that as many as 34 percent of Internet users are female, while Anderson (1995) suggests that fewer than five percent of the user population are women. Evans (1995) suggests that “distance education has an important contribution to make in overcoming barriers to women’s participation in the developed and developing world.”

Almost paramount in dealing via distance education with students of other, that is to say non-U.S., cultures are the changes that will occur sociologically. Brender recently reported that the biggest barrier to online education in Asia is that it changes the relationship between the teacher and the student. In Japan education has been geared to the elite. “By passing exams to enter college, students fall into the pecking order regardless of the energy they expend once they’re enrolled” (Brender, 2001). Online education would change that by developing other criteria for student evaluation.

A cultural transformation is taking place in educational institutions as a result of technological advances. The accessibility of a particular technology is its stability
and the ease of use as well as the institutional commitment to the technology (Anandam, 2000). Students no longer need to live in close proximity to a college in order to complete college-level course work. While traditional concepts and practices of teaching and learning are challenged, the technological tools exist to transform, modify, and embrace the promising changes (Gilbert, 2000b).

Technology also benefits students in other ways. Rising student expectations have pushed technological advances from “a place where documents are on display to a place where you actually do things” (McCandless, 1999). Students can use technology to receive advising, register for classes, explore potential careers, and prepare assignments for classes (Hirt, Murray, & McBee, 2000). EDE has become increasingly seamless as students register, purchase texts, receive tutoring, and other support services, access online libraries, track their academic progress toward a degree, prepare to transfer from one institution to another, and receive transcripts electronically (Conrad and Thanasides, 1997; Gibson & Elwood, 1998; Roecker, 1996). But these benefits come at a price for participating providers: “Be prepared for it to take twice as long to implement and cost twice as much as your best efforts” was the advice offered by Phillip Swain, director of the Center for Lifelong Learning at Purdue University, for implementation of technical support (Rivard, 2001b).
Community/Interactivity

Deming (2000) indicated that for distance learning to be successful two important interaction components are needed: access to teachers on a regular basis for interaction and help and access to classmates for group interaction and collaboration (Deming, 2000). “Some people assume that traditional education is intimate (and thus good) while distance education leaves learners isolated (and thus is acceptable for only for those unfortunate adults who have no other choice)” wrote Steve Ehrmann (1995). Referred to as “cave syndrome” this lack of interaction with classmates and no on-campus work was recently listed as one of several student misconceptions about EDE (Gronh, 2000).

Student-faculty interaction in and out of the classroom has been shown to promote academic integration and persistence (Astin, 1984; Fulford & Zhang, 1993; McHenry & Bozik; 1995; Sidle & McReynolds, 1999). Belief in the importance of student-teacher interaction is so widespread in the literature of education as to be assumed to be a basic need for learning to occur. Dean (1994) reported that two-way communication has been identified as a desirable component in distance learning, creating a new paradigm. Some critics of distance learning, furthermore, cite the lack of social interaction among students as a weakness (DeVries & Wheeler, 1996; Saba, 1998b; Shale, 1990; Trinkle, 1999). Saunders and Weible (2000) reported the 82 percent of the faculty at Marshall University agreed that the absence of student-to-student and student-to-instructor interaction makes Internet courses less valuable to students.
Johnson (1992), however, argues that education at a distance is an experimental community coming to be, formed from relationships and technological possibilities that are rapidly developing and opening new possibilities and new problems. King (1994) supports this argument as seen in the following comments regarding the online community:

I believe that at the core of an exemplary online class is an online community that has formed between the instructor and the students. An online community can be defined as a group of people who gather in one place online and interrelate because of a common interest.

Distance learning offers this necessary interactivity (Dean, 1994; Paskey, 2001a). Introduction of the new information technologies and electronic media has modified the interactivity between student and computer. Because EDE involves a different set of methods from the traditional classroom environment, learner-to-learner interaction is critical in EDE, more than in the traditional classroom (Anderson & Garrison, 1995). Communication technologies make such interactivity an integral part of the distance learning process. In fact, learner-to-learner interaction increases in Web-based environments (Saba, 1998b). In face-to-face classrooms or out-of-class conversations, students are hindered by prejudice against classmates, race, class, age, handicap, or lack of physical attractiveness, none of which is a factor in electronic communication. Terri Hedegaard-Bishop, vice president of the University of Phoenix's distance learning program, suggests that, on the other hand, with online studies “people aren’t responding to physical features, gender, charisma – they are responding to ideas, and that can be very freeing (Back to School, 1999, p. 2).
Time-delayed conversations allow adults studying off-campus to interact on their own time and at their own convenience with others. These conversations might occur via e-mail, fax, voice mail, or computer conferencing with the instructor or members of the class.

On the Net, [sic] real communities are transformed into virtual communities of navigators, whose existence depends on their interactive activity. Interactivity is the characteristic that makes it possible to communicate and take part in the construction of a renewed space of knowledge, to which each member is called to make a personal contribution. (Padula, Reggiori, & Ghiselli, 2001).

Emerging research into online educational collaborations indicate that high levels of active user participation and interaction are possible (Harasim, 1990). Some teachers have reported higher levels of student participation and a qualitative difference in the level of interaction as well as more thoughtful responses using this method of instruction (Borchardt, 1999). For example, the Harasim study (1990) indicates that students sent an average of 5-10 conference notes per person per week over a 12-week course. This figure did not include e-mail notes. A recent study by Inman, Kerwin, and Mayes (1999, p. 583) suggests that "although instructors may regard the lack of direct interaction a weakness in EDE, students may feel it is not a detrimental loss and may be compensated for by the added convenience." Indeed, Jarmon (1999) states that online instructors report a greater perceived sense of their individual students than they do in the traditional classroom setting. However, interaction does not simply occur but must be designed into the instructional program (Berge, 1999). This sort of interaction does not start without faculty requiring it or providing prompts and guidance to assist the students in participating.
To facilitate interaction among students, Saba (1998c) recommends dividing “chat” into three strands: a formal strand where students are required to enter comments and observations; a less formal strand, where students exchange information and comment about their readings that may or may not be linked to matters required in the formal strand; an informal strand, where students chat about matters that “captured their interest.”

This method is also a way of managing the text material that is created when students interact heavily.

In the online classroom, when students discuss issues unrelated to the course topic or are verbose I can simply scan through their messages, saving time. Also, I can read much faster than people speak. I can get through considerably more material in less time when I read it as opposed to hearing it. (Howlett, 2000).

The online environment can also be less intimidating than the traditional classroom, and students are often more candid online (Gilcher, 1999). Thus, connection becomes the goal for distance education – connection of learners with ideas, information, teachers, each other (Gilbert, 2001c), and to an institution’s cultural identity (Ehramann & Zuniga, 2001). The greatest strength of online technology, as far as students are concerned, is its use for communication and interactivity. These findings have direct implications for the development and implementation of electronic student services and delivering online coursework.

**Pedagogy**

Because of rapid developments in and adoption of technologies, many institutions of higher learning are being placed in positions of vulnerability. The advantage of location, for example, no longer ensures the college a market based on
geography. Additionally, the technologies designed and promoted are constantly changing. One third of all classes are using Internet resources as part of the syllabus, compared to 25 percent in 1997 and 15 percent in 1996 (Council for Higher Education Accreditation, 1999).

Pedagogy is defined “as the activity of teaching, parenting, educating, or generally living with children, that requires constant practical acting in concrete situations and relations” (van Manen, 1990, p. 2). Educators, then, must avoid being distracted by superficial changes, while at the same time using technology to create courses that are pedagogically sound, organizationally strong, and institutionally supported (Schrum, 1998).

“The rapid growth of distance learning in the United States raises concerns about how to assure the quality of course offerings” (Eaton, Merisotis, & Merkowitz, 1998; Johnstone & Krauth, 1996). Technology suggests significant changes in thinking about student learning and the shifting focus from teaching to learning (Girod & Cavanaugh, 2001; Johnstone, 2001). “In reality, distance education no longer has a distinct and common pedagogy” (Daniel, 1996, p. 56). The core of EDE programs is a high-quality curriculum designed specifically to meet the needs of the learners remote from their instructor (Lever-Duffy & Lemke, 1996). Michael Moore, the academic director for the American Center for the Study of Distance Education, suggests that important factors in any educational situation are dialogue, the amount of control exerted by the learner, and structure, the amount of control exerted by the instructor or educational institution (Saba, 1998c).
If education is fundamentally about dialogue and reflection, distance education helps frame and establish educational dialogue in two significant ways: the print base and the interaction (Nobles, 1997). The key is to select appropriate instructional strategies consistent with the environment in which they will be used. Pedagogical concerns include identifying learning goals, philosophical changes in teaching and learning, reconceptualization of the teacher's role in the evaluation of student and instructor, and stimulation of interactivity (Schrum, 1998). Nelson (1998) suggests that utilizing Internet and Web-based technology combined with Gardner's multiple intelligences creates a learning environment for teaching that capitalizes on students' individual strengths.

Furthermore, many thousands of well-conducted research studies comparing televised learning or computer-based learning or print-based correspondence education or a mix of other technologies with traditional classroom lectures have been completed (Bates, 2000). A common theme of past studies of distance education linked effectiveness to academic outcomes. In a 1967 review of 350 instructional media comparisons, Reid and MacLennan found no significant differences in academic achievements between distance learners and students taught in traditional classrooms. Russell replicated this research in 1996 in a meta-analysis of 218 studies comparing distance education and traditional education, with the same results. Although authors such as Barker and Platten (1988) and Beare (1989) dealt with technologies other than EDE, authors such as Ritchie and Newby (1989) and Kendall and Oaks (1992) reported no differences regardless of the medium used. Searcy (1993) and Nixon (1992) conducted studies to determine whether students learn as well via distance
education as via traditional education (Parrott, 1995). Both Searcy (1993) and Nixon (1992) found no significant differences in average Grade Point Averages (GPA's). Searcy, however, (1993) did find that student completion rates might be higher in the traditional sections.

Merrion (1992) indicated in her analysis that while differences do exist, they do not pose any pedagogical problems. Britton found no differences in the perceptions of course content, instructional delivery methods, and student outcomes. In a 1999 study (NEA, 2001, p. 21), the Institute for Higher Education Policy (IHEP) also found that “regardless of the technology used, distance learning courses compare favorably with classroom-based instruction.” IHEP (1999) noted that three broad measures of effectiveness of distance education were examined: student outcomes, such as grades and test scores; student attitudes about learning through distance education; and overall student satisfaction toward distance learning. Kuntz (1999, p. 18), citing Carey (1991), stated, “We are past the point where basic questions about the effectiveness of distance learning have to be asked. Distance learning works.”

The most consistent finding in the distance education literature was the similarity in academic performance between the students enrolled in traditionally offered face-to-face classes and students enrolled via technology (Lord, 1998; Willis, 1993). In general, technology-based training can be as effective as classroom instruction and usually results in time savings (Marquardt & Kearsley, 1998). In fact, Moore and Kearsley (1996, p. 65) suggested that given the evidence, “it seems unreasonable to continue to ask if distance education courses can be as effective as
classroom instruction in terms of learner achievement measures. (Westbrook, 1999, p. 32)

So there has been remarkable consistency of results, dating from the 1970's, in comparing various methods of distance education with the more traditional classroom environment. The research clearly shows that distance education is an effective method for teaching and learning (Barker & Platten, 1988; Bates, 2000; Gagne & Shepherd, 2001; Reid and MacLennan, 1967; Russell, 1996; Ryan, 2000; Simonson, 1997). And evidence is accumulating that distance learning is becoming a mainstream instructional delivery system for post-secondary courses and degree programs (Robyler, 1995).

"The zest for distance learning is tinged with some apprehension for the future," said Bob Chase, president of the NEA (Carr, 2000d). "However, with the right subject matter, with the right instructor or facilitator, and for the right student, Internet or online classes can provide an effective educational environment and offer a viable alternative to traditional classroom instruction" (Cooper, 2001, p. 58). Research on media-assisted distance education since the 1930's confirms that when such courses are well designed, they are as effective as those taught in a traditional environment (Johnstone, 1991). Indeed, Newman and Scurry (2001) suggest that as technology's impact on pedagogy becomes more profound, each institution will need to develop a strategy for its use.

However, a national report released April 1999, What's the Difference? A Review of Contemporary Research on the Effectiveness of Distance Learning in Higher Education, raises questions about the effectiveness of distance education and whether is it as effective as
the traditionally delivered instruction. The report reviews a broad array of research and articles about technology-based education and finds there are significant gaps in the research and flaws in the methodology (O'Brien, 1999). The report further suggests that distance education research fails to use randomly selected subjects, focuses too heavily on individual courses rather than on effectiveness of entire academic programs, and pays too little attention to the limitations virtual libraries place on the academic direction of courses (Blumenstyk & McCollum, 1999).

In view of the large amount of research regarding the issue of EDE and academic achievement when compared to traditional classroom delivery, it can be assumed that this is not a factor that significantly impacts the perceptions of students' experiences of support services; consequently, this line of study will not be pursued further.

Chapter Summary

The literature reveals distance education provides high-quality learning experiences (Baker, 1997; Ehrmann, 1995; Verduin & Clark, 1991). The literature also indicates that the level of student support services is just as important as the standards of quality of instruction (Moore, 2000; Namm & Holly, 2000). Moore (2000) suggests that student services for EDE needs to consider seven basic functions. These include pre-enrollment activities, admissions and registrations systems, academic advising, financial planning, access to library and bookstores, degree auditing and transcript services, and technical support. Some key findings of the literature review include the following ideas:
A number of personal qualifications have been identified for successful EDE students. These include having a strong reason for taking the EDE course; having time, ability, and access to move rapidly through the course material; being independent learners; having familial support; and having a certain level of technological skill. "It takes a self-motivated and committed student to be successful in online learning" stated George Pry, president of Art Institute of Pittsburgh (Donahue, 2001b).

Ethnicity may be a factor in choosing EDE. Research suggests that when given a choice of delivery method of instruction white males are most likely to choose EDE and Hispanic females most likely not to. Further study is needed to determine if ethnicity is a factor in student success in EDE.

Age may be a factor in learning styles, in student satisfaction with learning, and in success as defined by the student. There may be significant sources of difference embedded in the broad range of adult life cycles, phases that are less definitive than the growth and development cycles of the traditional college student.

Serving students well in distance learning environments should include examining students' preferences for different teaching styles, as well as their expectations of the learning environment. "Web-based training may be cheap and simple, but many students lack the self-discipline or the learning style that makes it effective for technology training needs" (Deakin, 2001).

The physical environment in which distance learners study can have a significant impact on student success. The potential and power of the environment is
often not perceived by those engaged within it. Instructors can encourage students to perceive and understand the influence of their personal environments.

Many adult learners may not respond to offerings of study skills workshops. As a result, intervention may need to include mentorship, reminders, study tip information sheets. Many of these strategies are already in place in the traditional classroom environment; ways must be found to bring the same level of skill development to distance education learners.

Interactivity is a pedagogical consideration for EDE instructors and students. Students can interact in three ways: with the content, with the instructor, and with the other learners. A given class must be structured by the instructor to ensure active participation by students. This finding has direct implications for practice for student services professionals. Limited research has been conducted with distance learning students using Gardner's multiple intelligences. What has been done suggests customizing communication and learning environments based on student preference for a specific intelligence.

Computer tutorials may have an impact on the perceived success of students in EDE. Many publishers of educational material are now providing computer tutorials to assist EDE students. This method of supplemental instruction could have an impact on students' expectations of EDE and access to support services.

Despite a large and growing body of research on the separate topics of student services and EDE, little research has been conducted on students' expectations of support services for EDE. This is hardly surprising in a field as recent as EDE and
where administrators and faculty are just beginning to realize that needs of distance learners parallel those of traditional learners.
CHAPTER III

RESEARCH METHODOLOGY

Research methodology refers to the researcher strategy for gathering and analyzing data to achieve research objectives (Lincoln & Guba, 1985). The choice of research methodology will guide an investigator's strategy (Lincoln & Guba, 1985) and is shaped by a researcher's assumptions, interests, and purposes (Bogdan & Biklen, 1998). This study is undertaken to describe and communicate a student-constructed model of student services for EDE. A phenomenological approach was used in this qualitative study to explore the phenomena and to hear the voices of students describe their experiences with regard to support services in the EDE environment. A theory subsequently emerged from the thematic analysis that will lead to improvement of the student support services infrastructure for EDE. Due to the emphasis on the generation of theory from data, a grounded theory was selected as this study's research methodology. A constant comparative analysis, a basic procedure in the grounded theory approach, was conducted to categorize the data, to develop themes, and to develop the resultant theory.

Qualitative Research

Qualitative research is multimethod in focus, involving an interpretive, naturalistic approach to its subject matter. This means that qualitative researchers study things in their natural settings, attempting to make sense of or interpret phenomena in terms of the meanings people bring to them. (Cresswell, 1998, p. 15)
Merriam and Simpson (1995, p. 45) expand on this definition by emphasizing that "qualitative research assumes the existence of many realities constructed by individuals with interaction in their natural environments."

Qualitative (naturalistic) inquiry refers to research that produces descriptive data -- people's own written or spoken words and observable behavior (Bogdan & Biklen, 1998). It produces findings by means other than quantification or statistical procedures and can generate a substantive theory (Strauss & Corbin, 1990). The focus of this qualitative study was to describe and communicate a student-constructed model of student services for EDE, rather than pass judgement on its value (Bogdan & Biklen, 1998; Merriam & Simpson, 1995). Baker (1997) reported that Stainback and Stainback (1988) suggest that qualitative methodology provide a framework in which to gather a range and variety of interrelated data into a meaningful whole, in order to develop an understanding of a phenomenon. In this study, the phenomenon is students' expectations of student support services for an electronically delivered distance education course.

The research strategy will take the form of a single-site, multiple source investigation involving a variety of people, events, and documents. Research procedures are flexible and exploratory and will rely heavily on discovery through interaction with participants. Discovery, then, generates a theory through investigation of relationships and activities in electronically delivered education (Lincoln & Guba, 1985). Figure 1 provides an overview of the research process and illustrates data collection and analysis for each research question.
Define Terms and Data Source Selection Criteria

Determine Initial Data Collection Sources

Code Interviews

Data Collection

Theoretical Sampling

Documents

Interviews

Field notes

Refine Design

Literature Review

Data Analysis

Develop Theory

Member Checks

Report Findings

FIGURE 1 RESEARCH DESIGN FRAMEWORK
Phenomenology

Qualitative research is "the investigation of the interpretation and meaning that people give to events they experience" (Polkinghorne, 1991, p. 108). Qualitative research includes several methodologies, i.e., ethnography, ethnomethodology, symbolic interactionism, existentialism, action research, phenomenology, and case study (Chenitz & Swanson, 1986; Gall, Gall, & Borg, 1999) and uses description as its tool for discovery and understanding (Rudestam & Newton, 1992). For this study the phenomenological approach will be used. Phenomenology describes how one orients to lived experience (Gall, Gall & Borg, 1999; van Manen, 1990) or reality as it appears to individuals (Borg, Gall, & Gall, 1993) or elucidates the meanings of human experience (Rudestam & Newton, 1992). Phenomenological research begins in the lifeworld (van Manen, 1990) with explorations of the phenomena of an experience (Clandinin and Connelly, 2000b).

Phenomenological research seeks to answer two related questions: What is the phenomenon that is experienced and lived? How does it show itself? (Cresswell, 1998; Valle & King, 1978; van Manen, 1990). The question according to Patton (1990, p. 88) is "what is the structure and essence of experience of this phenomenon for these people?" Context, then, is critical in developing an understanding of student expectations of EDE (Borg et al, 1993). Each experience of a student enrolled in a course delivered through EDE is different and is unique to the individual living that experience. This is described by van Manen (1990, p. 5) as "the experience of the unique." This research methodology, in other words, aims at gaining a deeper understanding of the nature or meaning of our everyday experience (van Manen,
1990). Bogdan and Biklen (1998) noted that Psathas (1973) reported that phenomenology begins with silence: Phenomenologists do not assume that they know what things mean to the people they are studying (Bogdan & Biklen, 1998).

**Phenomenological Process.** Phenomenology as a method involves the researcher listening, observing, and “forming an empathetic alliance with the subject” (Rudestam & Newton, 1992, p. 33) with the idea of creating themes that reflect the co-researchers’ lived experiences. In other words, the researcher conducts a conversation with the participants that explores the meanings of the experience for individuals and asks them to describe their everyday lived experiences. Once the data are collected, they are “reduced, reconstructed and analyzed” (Rudestam & Newton, 1992, p. 39). Typically these data are collected through long interviews, augmented with researcher self-reflection and research literature, with informants ranging in number from five to 25 (Creswell, 1998). Data analysis employs a series of steps (Cresswell, 1998; Orbe, 1996):

- The original protocols are divided into statements or horizontalization.
- The units are transformed into clusters of meanings expressed in phenomenological concepts.
- These clusters are linked together to create a textural description of what was experienced and a structural description of how it was experienced.
- The study ends with the reader having a better understanding of the essential essence of the experience, recognizing that a single unifying meaning of the experience exists.
**Assumptions of Phenomenology.** Phenomenological analysis requires the researcher to state her or his assumptions regarding the phenomenon under investigation and to bracket these preconceptions to fully understand the experience of the subject (Cresswell, 1998). The concept of epoche, in which the researcher brackets her or his own preconceived ideas about the phenomenon to understand it through the voices of the informants, is central. The participants in the study are carefully chosen as individuals who have experienced the phenomenon under scrutiny. The manner in which co-researchers' personal experiences will be introduced into the study is determined by the researcher (Cresswell, 1998).

Phenomenology does not offer the possibility of definitive effective theory to explain and/or control the world, but rather it offers the possibility of plausible insights that bring us into more direct contact with the world (van Manen, 1990). However, the researcher has anticipated the possibility of an emerging theory because of the originality of the data collected and the lack of empirical data on the topic of student expectations of support services in the review of the literature. As a result, grounded theory will be considered for this research study as a way of developing a model of student services for EDE.

**Grounded Theory**

The grounded theory perspective reflects a naturalistic approach to interpretation, stressing naturalistic observations, open-ended interviewing, the sensitizing use of concepts, and a grounded (inductive) approach to theorizing (Denzin & Lincoln, 1998). It is perhaps the most widely employed interpretive
research strategy in the social sciences (Baker, 1997). Grounded theory as a scientific approach was introduced by Glaser and Strauss in the book *The Discovery of Grounded Theory* in 1967 (Merriam, 1998). As with the phenomenological approach, the investigator serves as the primary instrument of data collection and analysis and strives to derive meaning from the data. The result of this type of qualitative research is a theory that is “grounded” in the data (Merriam, 1998, p. 17). The theory developed in this manner is substantive, rather than a formal or grand theory. Substantive theory uses “specific, everyday-world situations” (Merriam, 1998, p. 17) and has a usefulness to practice that may be lacking in grand theories.

Theories are not predetermined prior to the study; they are tentative and emerge as a result of the study. The overall object of this analysis is to “seek patterns in the data” (Merriam, 1998, p. 18). It is the patterns emerging from the data, arranged in relationship to each other, that build the grounded theory (Denzin & Lincoln, 1998; Merriam, 1998).

Glaser and Strauss (1967) use the constant comparative method of data analysis as a means of developing grounded theory. The basic strategy is to constantly compare and analyze the data (Merriam, 1998): A researcher asks the question, “Are there sufficient data to support a category or hypothesis?” If so, the element is retained; if not, it is discarded (Merriam, 1998). As the theory crystallizes, “major modifications become fewer;” later modifications clarify the logic, eliminate non-relevant properties, and integrate elaborate details into the categories (Merriam, 1998, p. 191). The focus of analysis is not merely on collecting or ordering a mass of data
The appeal of this methodology is broad, for it provides a set of clearly defined steps for a researcher to follow (Denzin & Lincoln, 1998). The process of data analysis is systematic and follows a standard format:

- In open coding a researcher forms initial categories of information about the phenomenon being studied by segmenting information.
- In axial coding, an investigator assembles the data in new ways.
- In selective coding, a researcher identifies a "story line" and writes the story that integrates the categories in the axial coding model.
- Finally, a researcher may develop and portray a conditional matrix that elucidates the social, historical, and economic conditions influencing the central phenomenon.

The research methodology for this study was designed to be open-ended to accommodate the variations likely to be encountered during the interview process. It was expected to yield deep, rich concepts, linkages, and patterns (Strauss, 1987, Strauss & Corbin, 1990). Grounded theory methodology was selected for this study because it could yield a theory to fit the phenomena being researched; "fit" means the categories are readily applicable to and indicated by the data under study (Glaser & Strauss, 1967).

Critics of grounded theory, however, express concern that the analyst may get caught in the coding (Denzin & Lincoln, 1998), that what constitutes a theory is not clear (Woods, 1985), and that the perspective's affinity with positivism may be
problematic (Merriam, 1998). Table 5 illustrates these two methodologies and provides an overview of how the two complement each other.

Model

"Model" has been defined in a number of ways including "a representation in three dimensions of proposed structure; a design or style of structure proposed for imitation" (Fowler & Fowler, 1998). Coleman, Butch, and Carson (1984) defined model as an analogy that helps a scientist order findings and see important relationships among them. For the purpose of this study, model is defined as a proposed structure, constructed in collaboration with co-researchers, that orders the findings in a such a way as to reveal the interrelatedness between them.

Research Design

The design for this research study is an iterative process of collection, analysis, integration, and synthesis (see Figure 1). The purpose of the study and the nature of the research questions determined the design. Constant comparative data analysis procedures were incorporated into this study. The guiding research design for this research was based on theoretical sampling of multiple source data collected in their natural setting from interviews, field notes, and records and documents. Data were analyzed using constant comparative methods with the use of a thematic software program.

...designs must be emergent rather than preordinate, because meaning is determined by context to such a great extent, because the existence of multiple realities constrains the development of a design based on only one (the investigator's) construction, because what will be learned at the site is always dependent on the interaction between investigator and context and the interaction is also not fully
TABLE 5
COMPARISON OF PHENOMENOLOGY AND GROUNDED THEORY

<table>
<thead>
<tr>
<th>Focus/Aim</th>
<th>Phenomenology</th>
<th>Grounded Theory</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Focus/Aim</strong></td>
<td>Understanding the essence of experiences about a phenomenon</td>
<td>Developing a theory grounded in data from the field</td>
</tr>
<tr>
<td><strong>Discipline origin</strong></td>
<td>Philosophy, sociology, psychology</td>
<td>Sociology</td>
</tr>
<tr>
<td><strong>Data collection</strong></td>
<td>Long interviews with up to ten people</td>
<td>Interviews with 20 to 30 individuals to “saturate” categories and detail a theory</td>
</tr>
<tr>
<td><strong>Who is studied?</strong></td>
<td>Multiple individuals who have experienced the phenomenon</td>
<td>Locate a homogenous sample</td>
</tr>
<tr>
<td><strong>How sites and participants are selected to study</strong></td>
<td>Finding individuals who have experienced the phenomenon</td>
<td>Consider interviewing issues (logistics and openness)</td>
</tr>
<tr>
<td><strong>What are common data collection issues?</strong></td>
<td>Bracketsing one’s own experiences and the logistics of interviewing</td>
<td></td>
</tr>
<tr>
<td><strong>Data analysis</strong></td>
<td>Statements, meanings, themes, general description of the experience</td>
<td>Open coding, axial coding, selective coding, conditional matrix</td>
</tr>
<tr>
<td><strong>Classifying</strong></td>
<td>Find and list statements of meaning for individuals</td>
<td>Engage in axial coding-causal condition, context, intervening conditions, strategies</td>
</tr>
<tr>
<td><strong>Interpreting</strong></td>
<td>Group statements into meaning units</td>
<td>Engage in open coding-categories, dimensionalize properties</td>
</tr>
<tr>
<td><strong>Key words/phrases/concepts</strong></td>
<td>Develop a textual description: “describe what happened”</td>
<td>Engage in selective coding</td>
</tr>
<tr>
<td><strong>Techniques</strong></td>
<td>Develop a structural description: “how the phenomenon was experienced”</td>
<td>Develop a conditional matrix</td>
</tr>
<tr>
<td><strong>Assumptions</strong></td>
<td>Develop an overall description of the essence of the experience.</td>
<td></td>
</tr>
<tr>
<td><strong>Key words/phrases/concepts</strong></td>
<td>Bracketsing or epoche</td>
<td>Axial, open, and selective coding</td>
</tr>
<tr>
<td><strong>Techniques</strong></td>
<td>Experiences, meaning, essence; Clusters of meanings</td>
<td>Constant comparative approach</td>
</tr>
<tr>
<td><strong>Assumptions</strong></td>
<td>Truth, intersubjective validity</td>
<td>Generation or discovery of a theory</td>
</tr>
<tr>
<td><strong>Techniques</strong></td>
<td>Deep; rich description</td>
<td></td>
</tr>
<tr>
<td><strong>Assumptions</strong></td>
<td>That there is an essence to shared experiences</td>
<td>Theory is substantive if grounded in the data</td>
</tr>
</tbody>
</table>
predictable; and because the nature of mutual shaping cannot be
known until they are witnessed. (Lincoln & Guba, 1985, p. 208)

Each component of the design is described in the following subsections:
Selection of Participants, Interviews, Description of the Setting, Data Sources, Role of
the Researcher, Data Analysis, Trustworthiness/Validity, and Strategies for the
Protection of Human Subjects. A pilot study was conducted to identify any
refinements necessary in the research design (Locke, Spriduso, & Silverman, 1993).

Selection of Participants

Participants selected had enrolled in at least one electronically delivered course
taught through Chemeketa Community College. They were chosen using the following
criteria: (a) they were enrolled in an EDE course that met specific criteria; (b) this was
not their first EDE experience; (c) they lived more than twenty miles from campus;
and (d) they agreed to participate in the interview process. Ten participants were
selected for the interview. This number was selected because it allowed a rich and
deep description of the experience, while still offering variety among the cases.

Students were selected from classes that met the following criteria:

- Each was a core class in degree and certificate programs. Choosing a core class
  increased the probability that a variety of students would participate.

- The class was offered through EDE several times. This lessened the
  interference of the technology with the pedagogy of the experience.

- The instructor was experienced in EDE. A review of the literature suggests
  that student satisfaction with an EDE course is directly related to the actions of and
  interactions with the instructor. “Instructors set the tone of the interaction, establish
the pace, facilitate the interaction and define the objectives, activities, and the materials” (Johanson, 1996, p. 9).

The distance from the institution was chosen based on prior research by Barker and Platten (1988) who found the average distance of students, one-way from the college, was 20.4 miles.

A process to determine eligibility of students and their interest in participating in the research was developed in close cooperation with Janet Scott, director of distance education at CCC. Selected students were then contacted, provided an overview of the study written by the researcher, and interested parties were asked to contact the researcher. Eligibility was conferred according to the abovementioned criteria, and information on how to contact the researcher was provided. This process minimized the potential violation of the students’ right to privacy under the Family Educational Rights and Privacy Act (FERPA). The researcher sent a letter via e-mail describing the study, an informed consent document, and a demographic survey of student data. Copies are located in the appendix.

Description of the Setting

This study was undertaken to describe and communicate a student-constructed model of student services for EDE. The site for this study was Chemeketa Community College (CCC), an urban public community college known for its pioneering work in the field of EDE located in Salem, Oregon. The city is home to a wide range of students and potential students with varying needs and skill levels. Chemeketa’s student population reflects that diverse composition.
CCC offered its first EDE course in 1990. Two departments share responsibilities for distance education: one for distance education, including correspondence, and one specifically for EDE. CCC currently has an enrollment of over 40,000 students, including part-time and non-credit students. Eleven thousand are enrolled in EDE. Sixteen percent of those students were enrolled from host sites, usually other community colleges. Twenty-three percent were out-of-district students; five percent were out of state students; and nearly one percent were international students (Scott, 2000).

At CCC, distance education receives campus-wide support from administrators, faculty members, and staff members. Funding for EDE provides for the following personnel: a director of distance education, one full-time assistant, one part-time support staff, three full-time technical staff, and two full-time rotating faculty. The college offers extensive support services to students, including an online bookstore, registration services, online application process, library access, e-advising, and tutoring (Scott, 2000; Witherspoon, 1997). CCC provided the first distance education catalog of course offerings in Oregon. Called Chemeketa Online, the catalog lists courses offered electronically and through televised learning opportunities (Chemeketa, 2000). It provides students with specific course information, general information regarding the college, resource information on the Web, and Bachelors’ degrees through distance education.

CCC was chosen for this study because it has served as a model for EDE for over ten years. It offered the largest selection of courses in Oregon online, as well as the greatest number of services to students electronically. It also advertises “you may
earn college credit hours and fulfill the requirements for an Oregon Associate of Arts degree or an Associate of General Studies degree by enrolling in courses offered via distance” (Chemeketa, 1999, p. 3). The college also provides a list of services to distance education students, including library and bookstore services (Chemeketa, 1999). These conditions made it an ideal site for this study.

Interviews

The researcher gathered student expectations via an in-depth interview with each selected participant. According to Denzin (1970) and Bender (1993), interviews are the most appropriate choice when the researcher is concerned with ascertaining the subjective meaning and experience of participants.

The very nature of EDE does not require students to be on campus, so the interviews were conducted by telephone. The researcher, via e-mail, made arrangements to call at a time that was convenient for the student and that allowed participants to feel relaxed, free of distractions, and able to carry on a conversation with the researcher. Special adaptive recording equipment was purchased that allowed the researcher and participant to be recorded. The initial electronic conversation and quantitative data gathering preceded the interview and helped to establish rapport and open a dialog with the participants. Students agreed to be recorded and were informed at the start of the conversation that the interview was being recorded. The interviews were tape-recorded and extensive field notes taken simultaneously. A high level of content validity was assured through three separate listenings to each interview (Taylor, 1999).
An inductive approach was used; the initial question to each student was only about her/his experience with student services as an EDE student. The interview guide approach (Patton, 1990) was used to collect data. Topics were specified in advance, but the researcher decided the wording and sequence of the questions, based on input from the participants. An interview conducted in this manner often turns into a form of conversation (Clandinin and Connelly, 2000). This method provides greater depth (Denzin & Lincoln, 1998) and increases the comprehensiveness of the data (Marshall & Rossman, 1995; Patton, 1990). More than one interview per participant may be necessary to affirm an emerging theory or to understand variances within a theme.

Strengths of the interview as a data collection method include the following:

- Large amounts of contextual data quickly obtained.
- Cooperation with the researcher facilitated.
- Access for immediate follow-up for clarification and omission facilitated.
- Aid for discovering complex interconnections in relationships provided.
- Data collected in a natural setting.
- Analysis, validity checks, and triangulation facilitated.
- Flexibility in the formulation of hypotheses provided.
- Utility for uncovering the subjective side, the “native’s perspective” of processes and phenomena provided. (Marshall & Rossman, 1995, p. 89).

Marshall and Rossman (1995) cite a number of weaknesses of the interview as a method of data collection. One such weakness is that the process is dependent upon
the cooperation and honesty of a small group of participants. However, since the participants volunteered to assist in this research study, it was presumed unlikely that they would be uncooperative. In view of the length of the interview, the researcher believes it would be difficult to maintain consistent dishonesty and that through the clarifying questions, any lack of honesty would be noticed. Another weakness of interviewing as a method of data collection is that interviewing is highly dependent upon the ability of the researcher to be resourceful, systematic, and honest in order to control bias (Marshall & Rossman, 1995). Another noted weakness is that an interview-based study is difficult to replicate. However, since this is a qualitative study and any transferability of the research is left to the reader, it is unlikely there will be any attempt to replicate the study.

On the other hand, the interview is a widely used method of creating field texts (Mischler, 1986), which may be turned into written texts through a variety of means. The audiotaped interviews for the present study were fully transcribed. Extensive field notes were made as the tape recordings were reviewed (Clandinin and Connelly, 2000a). “Field texts help fill in the richness, nuance and complexity of the landscape” (Clandinin and Connelly, 2000b, p. 162) of the conversation more than memory alone is likely to construct. Completely transcribing the data added a depth to the voices of the co-researchers and allowed the results to be shared with the panel of experts to verify the findings. Field notes were made during the conversations and added to while listening to the recordings. Noted were life experiences and other observations, such as hesitations or lengthy pauses.
Most qualitative procedures call for the use of analytic induction (Denzin & Lincoln, 1998). At the heart of analytic induction is a thesis that there are regularities to be found in the physical and social worlds. They uncover the constructs a researcher will use in an iterative process—a succession of question and answer cycles—that will examine and then refine or modify the cases, based on the subsequent ones. In qualitative research, these procedures correspond to the grounded theory approach (Denzin & Lincoln, 1998). This research design is an iterative process of collection, analysis, integration, and synthesis (see Figure 1); this approach is open to discovery and the treatment of negative cases (Bogdan & Biklen, 1998). This framework is compatible with computer-assisted methods of analysis (Denzin & Lincoln, 1998), such as Qualitative Solutions & Research, Non-numerical Unstructured Data Indexing Searching and Theorizing (QSR NUD-IST) (NVivo, 2000). This database allowed the text of this study to be stored, edited, and retrieved; factual information about the documents, cases, participants, times and dates to be recorded; words and phrases in the text of the document to be searched for and automatically indexed.

Data Sources

The primary data source was the transcript of the interview. The researcher’s field notes supplemented the primary data source. Descriptive field notes are well endowed with description and dialog relevant to the experience and subjective meanings for participants. “Rich data are filled with pieces of evidence, with the clues that one begins to put together to make analytical sense of the phenomena” (Bogdan & Biklen, 1992, p. 121).
Other documents were reviewed for relevance to the topics. Course outlines and syllabi provided information on available resources, such as access to library and bookstores to purchase texts. An analysis of the student transcript of each participant provided demographic data as well as clues as to each student’s level of formal computer training at the time of enrolling in her/his online course. It was recognized that all participants might not have taken formal instruction in computers, yet might have been computer literate. A short demographic survey was designed and sent to the participants when they agreed to participate in the study. The subsequent interview provided the researcher with an opportunity to confirm each participant’s own definition of her or his technological level of skill. These data were fully detailed in the research findings.

Role of the Researcher

The researcher was the primary instrument for collecting and analyzing data in this qualitative study. The researcher’s background includes participatory experience with EDE, both as a student and as an administrator. Through active participation and previous research on EDE, the researcher has gained an overview and awareness of the activities and issues facing students in using this method of learning. The researcher’s experience in an EDE course and as coordinator of distance education services helped endorse the perspective of electronic learning in a broader context.

The researcher is grounded in student services; that is, her education and experiences are such that they influenced her response to the language of student expectations. This predisposition shaped the way the researcher collected, interpreted, and reported the data. The researcher holds the preconception that distance education
provides access to training and education for community members who are place- or
time-bound. She further believes that EDE offers a quality education in an alternative
delivery method. In other words, the researcher brought to this study the idea that
EDE is a "good thing," though not necessarily an acceptable method of instruction
for all students.

The researcher acted as an equal participant during the interviews without
taking the dominant role or offering judgmental reaction to the participants' responses. "The researcher may begin with some preliminary questions in mind or
may allow some foreshadowing of problems and relationships to direct the initial
focus of attention. Otherwise, however, researchers try to avoid imposing
presumptions and conceived structures" (Locke et al., 1993, p. 100). Bender (1993)
considers researcher bias to be one of the acceptable limitations of qualitative research.

Bender (1993, p. 50) states:

Rather than minimizing and eliminating researcher influence, the
qualitative discipline requires elevating it to a conscious level and
disclosing it to the reader. This practice not only enables us to redirect
unconscious bias, but it reveals to the reader the unique perspective
the researcher is studying. The researcher's perspective is half the
research equation.

In an effort to ensure control of researcher bias, a panel of experts on distance
learning – teaching faculty, program coordinator, and statewide coordinator –
reviewed a summary of the data to determine if they were consistent with what they
were finding on their own campuses and in their respective roles. The researcher also
polled the Council of Student Services Administrators – the statewide association for
students services administrators in Oregon — to ascertain if the data were consistent with what they had heard on their own campuses.

The depth of the phenomenological approach combined with a methodology grounded in naturalistic settings promoted a greater understanding of the importance of providing student support services offered for EDE through a community college.

Data Analysis

Management, analysis, and interpretation of qualitative data are part of a complex process. Field research leads to the production of large amounts of textual material, notes, journal entries, recorded conversations, descriptions of the field setting, memos, thoughts on coding schemes, and emotional experiences (Denzin & Lincoln, 1998; Gall, Gall, & Borg, 1999). Bogdan and Biklen (1998) define data analysis as the process of systematically searching and arranging interview transcripts, fieldnotes, and other materials to increase understanding and to enable the researcher to present the discovery to others. This task required organizing the data collected from the participants and categorizing into themes. Rudestam and Newton (1992) suggest that researchers resist the temptation to analyze or structure meaning until the data have been entirely collected. However, in this study, analysis began with the first interviews. Margin notes were made on the field notes, reflective passages were reviewed carefully, and a summary sheet was drafted (Denzin & Lincoln, 1998, p. 187). Thematic analysis, however, did not occur until all the data were collected.

Once a general framework was formed from reading through the transcripts, listening to the recordings, and conferring with the panel of experts, themes were generated based on “repetitive emergence and/or interpreted relevance” (Owen, 1984,
This created categories or themes of information representing the human experience (Rudestam & Newton, 1992; van Manen, 1990). The production of themes is acknowledged as a joint effort between the researcher and the participants.

Computer programs have multiple text management uses, including coding, locating and retrieving key materials, building conceptual models, and creating indices. Computer programs can also be used for theory construction. Some implement the logic and structure of the grounded theory of Strauss, Glaser, and Corbin (Denzin & Lincoln, 1998). QSR NUD-IST was used in this study to store, edit, and retrieve the text; to record factual information about the documents, cases, participants, times, and dates; to search for words and phrases in the text of the document; and to automatically index them (NVivo, 2000).

Trustworthiness/Validity

Lincoln and Guba (1985) suggest that criteria defined from one perspective may not be appropriate for determining criteria taken from another perspective. Criteria that are acceptable for positivist inquiry may not be the most useful for post-positivist inquiries because the beliefs are fundamentally different. Qualitative research is carried out in ways that are sensitive to the nature of human and cultural social contexts and is commonly guided by the ethic to remain loyal to the phenomena under study (Denzin & Lincoln, 1998). In qualitative research, the word “validity” is often supplanted by “trustworthiness.”

According to Denzin and Lincoln (1998) all knowledge and claims to knowledge are reflective of the process, assumptions, location, history, and context of knowing and the knower. From this point of view, validity or trustworthiness depends
on the "interpretive communities" (Denzin & Lincoln, 1998, p. 288), or the audiences. The following definition of "validity" was used for the purpose of this study: An account is valid or true if it represents accurately those features of the phenomenon that it is intended to describe, explain, or theorize (Denzin & Lincoln, 1998).

Merriam (1998) suggests that using multiple methods to confirm the emerging findings is one method of enhancing trustworthiness and leads to a fuller understanding of the phenomena: in this study, a student-constructed model of student services to EDE. Data gathered from this study's individual participant interviews were compared with the two panels of experts and the researcher's own perspectives developed from active participation in EDE.

To ensure trustworthiness of the research, a number of strategies were employed. "Extended and deep dialogue with the participants" (Warren Suzuki, personal communication, April 10 2000) was utilized as one way to address the issue of trustworthiness. Another stratagem used to increase trustworthiness in this study was the selection of two panels of distance education and student services experts who reviewed the data collected.

Merriam (1998) suggests that peer examination -- asking colleagues to comment on the findings as they emerge -- is one of the basic strategies to enhance trustworthiness. Consequently, the panel of expert raters reviewed the information gathered to verify the findings with her/his own experiences and to serve as sources of multiple data. The panel of three distance educators -- teaching faculty, a college coordinator for distance learning, and a statewide coordinator for distance learning -- reviewed the findings in discussion with the researcher. Also, the council of student
services administrators in Oregon was asked to verify the findings triangulated on her
or his own experiences with EDE.

Another strategy is to clarify researcher bias. At the beginning of this study,
the role of the researcher was articulated in the proposal. Bender (1993) considers
researcher bias to be an acceptable limitation of qualitative research.

Strategies for the Protection of Human Subjects

Protection of the participants was a critical component of this study and
reflected the researcher's personal philosophy. The researcher participated in the
approval process for the protection of human subjects at Oregon State University
before proceeding. The researcher took the responsibility of preserving anonymity of
the participants. To that end, the researcher defined procedures to code data in a
manner designed to safeguard the participants' identity. Also of critical importance and
ethical concern to the researcher is informed consent. Each participant signed a
consent agreement that stated the purpose of this educational research and defined the
risk to students, as well as providing contact information for the university and the
researcher.

Chapter Summary

A phenomenological approach was used to answer the following questions:

- Do students enrolled in EDE perceive a need for student services? If not, why?
- Which services are relevant to the students' experience?
- How do students want the services delivered?
If students constructed a model of student services for EDE, what would it look like?

Participants were chosen from core courses in order to offer the opportunity for a variety of students, i.e., professional technical, liberal arts, certificate, and degree students, to take part in the study. Furthermore, courses were taught by instructors who are familiar with EDE, so as to lessen the impact of technology on the experience.

Constant comparative analysis was conducted throughout the study, from which a theory emerged from the constant comparison of data collected from participants through unstructured interviews, field notes, and case documents. The theory was "grounded," that is, generated from the data. A theory developed in this way is substantive, uses "specific, everyday-world situations" (Merriam, 1998, p. 17), and has a usefulness to practice that may be lacking in "grand" theories. Such a theory is relevant for educational practice and may guide educational leaders in making decisions about the infrastructure, direction, and practices of EDE (Stainback & Stainback, 1988; Strauss & Corbin, 1990).

For the purpose of this study, "model" is defined as a proposed structure, constructed in collaboration with co-researchers that ordered the findings in such a way as to reveal the interrelatedness between them. The model of student services for distance learners has direct application and implications for the body of knowledge for student services and distance education.
CHAPTER IV

PRESENTATION OF THE FINDINGS

Chapter Four presents the findings from the qualitative data collected through the in-depth interviews to explore the experiences of ten students participating in EDE at an urban community college in Oregon. This research study was conducted to determine if students perceived a need for student services in EDE, what services should be provided, how services should be delivered and to develop a model of student services for EDE.

For the purpose of reporting findings, Chapter Four is divided into three sections. Section One introduces the reader to the setting, the participants, and the method of ensuring trustworthiness. Section Two presents the findings relating to the four research questions. The information in this chapter represents the voices of the students who participated in this qualitative research study. Excerpts of participant statements are used to illustrate the findings. A fundamental goal of the study was to let the co-researchers lead the "conversations" where their experiences would take them (van Manen, p. 100). The goal was motivated by the belief that "those living the experience are in a better position than outside entities to dictate what is salient information" (Kuntz, 1999, p. 39). Neither students' real names nor identifying information was given in order to protect confidentiality. Section Three offers a summary of the findings and transitions to Chapter Five, where recommendations for future practice and potential questions for future research are presented.
Section One: Participant Profiles

Section One profiles the student participants, outlines the academic programs in which they are enrolled, and describes the setting of the study. This section also identifies personal characteristics and prerequisite levels of computer competence necessary for students involved in distance learning opportunities. Section One also acquaints the reader with the method used to ensure trustworthiness.

Participant Profiles

The average age of participants [nationally] in EDE is 35 years, a majority of students have been women, more than 50 percent of students received financial aid, and over 90 percent balanced the multiple responsibilities of family and work with their education. (Kendall, Moore, & Smith, 2001, p. 2)

The student profile for this research study mirrors that of the recent research published by the Washington State University Distance Degree Program (2000) and replicated by Kendall, Moore, and Smith (2001). Of the ten participants interviewed, eight were female, six were between the ages of 31-40, and all indicated they played other roles and had other commitments that included spouse, children, and/or work-related positions. Six of the ten indicated they received financial assistance; this varied from federal financial aid (Pell grant and student loans) to employer assistance programs. Nine of the ten indicated they logged into class from home, with only one indicating both home and work.

I'm probably the classic definition of the traditional student in that I'm 36, went to college right out of high school, and ended up having a life in between and didn't finish college the traditional way. Now I'm back to get the training I need to progress to management in my major. I have four kids and three jobs, I don't have time to go to class three times a week — even if there was a program in fire science nearby. (S10)
Older, internally motivated, little in common with the instructors, comfortable with technology — yep that's me. Forty-year-old mother of three, returning to school, enough technological skill to be literate TODAY but maybe not tomorrow, relies on the kids to program the VCR, enrolled because of a burning desire to complete a degree, yet still have a life. (S8)

Online learning seemed a little strange at first. You ask a question and you don't hear for a couple of days. But you get used to it. Actually, I think I got more out of the course taking it this way. You can't just sit in the back of a classroom. If there's an essay you have to read it and comment on it. (S10)

Online learning is a flexible form of education because it allows the learner the option of where and when to learn. Students may learn with others in a group gathered in a classroom or computer laboratory or on the computer at home or elsewhere, communicating with other students and the instructor/lecturer or tutor only in a virtual space (School Holiday, 2001). Despite the flexibility of this method of learning, the most frequently cited reason for taking the course electronically was that it was required for the degree. However, the way in which it fit into the student's schedule was next on the list. Other reasons cited by participants included:

- It fit my schedule.
- The course looked interesting.
- Taking an online class appealed to me.
- Class schedule would not allow me to take this class on campus.
- I needed the credits.
- Another course interfered with my schedule.
It was the only course that had space available.

A variety of major fields of study were represented, though all indicated the intent to complete a degree beyond the Associate's level. All had completed prior coursework through EDE, though the number of EDE credits ranged from three to twenty-three.

Participants were asked to identify the average number of hours they spent on classwork. Results were evenly split between average and high interaction. Four participants indicated they interacted regularly at high level (5-7 message initiations weekly), and six felt they interacted online with their instructor and fellow students at an average level (2-3 weekly message initiations). Nine participants self-reported their levels of computer competency as advanced, with only one participant self-identifying skill level at the intermediate level.

Sources of data from the ten students were drawn from in-depth individual interviews, document review, the questionnaire of computer competency, and follow-up e-mail. The following table provides information about the ten participants who were interviewed and the way in which each participant's oral and written comments have been identified (S1-S10).
TABLE 6
STUDENT PROFILES

<table>
<thead>
<tr>
<th>ID #</th>
<th>Gender</th>
<th>Age Range</th>
<th>Field of Study</th>
</tr>
</thead>
<tbody>
<tr>
<td>S1</td>
<td>F</td>
<td>18-25</td>
<td>Political Science</td>
</tr>
<tr>
<td>S2</td>
<td>M</td>
<td>31-40</td>
<td>Associate of Arts – Liberal Studies</td>
</tr>
<tr>
<td>S3</td>
<td>F</td>
<td>31-40</td>
<td>General Studies</td>
</tr>
<tr>
<td>S4</td>
<td>F</td>
<td>18-25</td>
<td>Deciding</td>
</tr>
<tr>
<td>S5</td>
<td>F</td>
<td>31-40</td>
<td>Nursing</td>
</tr>
<tr>
<td>S6</td>
<td>F</td>
<td>51-60</td>
<td>Psychology</td>
</tr>
<tr>
<td>S7</td>
<td>F</td>
<td>31-40</td>
<td>Education</td>
</tr>
<tr>
<td>S8</td>
<td>F</td>
<td>31-40</td>
<td>Business</td>
</tr>
<tr>
<td>S9</td>
<td>F</td>
<td>26-30</td>
<td>Radiological Technology</td>
</tr>
<tr>
<td>S10</td>
<td>M</td>
<td>31-40</td>
<td>Fire Science</td>
</tr>
</tbody>
</table>

Personal Characteristics

Research suggests that distance learners bring to the learning experience a number of personal characteristics that influence their success in EDE coursework (Willis, 2001). These include having strong reasons for signing up for the course, the significance of the course to the goal, moving through the lessons fairly rapidly, having support from one’s family, being independent learners, being internally motivated, feasibility of time, accommodation of learning styles, and beginning with a certain level of technological knowledge and experience (Gibson, 1996; Gilbert, 2001c; Schrum, 1998).

Bernt and Bugbee (1990) suggest it may be important to determine just how well the student wants to do. The researchers indicated this was an important aspect but failed to address the significance of the student’s goal in the research. They conclude that while it “may be impractical to provide study skills workshops,
mentoring, and other interventions, some form of supportive strategy is clearly called for” (Bernt & Bugbee, 1990, p. 15).

*I am committed to this degree. It is the only way I can hope to achieve promotion. With a family of four to support, it is NOT [student emphasis] an option to quit and go back to school. I have a strong sense of purpose about learning this way, as well as practical reasons for doing this — I fully expect to graduate. (S5)

Every course I take fits into the degree. I know why I'm taking it and how it plays into my future plans. I have to do it and get it done. Having that strong a commitment makes it easier to do. At least in my opinion. (S10)

I'm also an introvert. Which means I study well by myself and usually need less interaction than other students do. I think my learning style lends itself to distance learning. (S8)

A quantitative study by Bernt and Bugbee (1990) investigated differences in study habits of high passers, low passers, and failures. Findings indicated that both primary study strategies (information processing and elaborative processing) and secondary strategies (executive monitoring, effortfulness, and strategic test taking) were significant discriminators among the groups (Bernt & Bugbee, 1990). The researchers did note that specific skills used only by the high achieving group included skimming the text, reading all the assigned study material, mental rehearsing, and overlearning (Bernt & Bugbee, 1990).

Finding a test proctor. Nobody told me to expect to have to do this. Having to make the arrangements, fitting my needs into the librarians' workday, finding a way to make the lack of transportation work for me — here in the middle of the Mojave, it took some resourcefulness to make it all come together — not once but time and again. I felt so proud — after I got over the annoyance of having to do it at all. (S4)

Working with the college and making arrangements to take the test here in P.A. rather than in Salem. (S10)
Searching out textbooks. Usually it works easily but once we were using an older edition and all the local stores had the newer one. The instructor loaned me his copy. Took some fast-talking on my part. But it worked. (S10)

I've always thought of myself as highly motivated, fairly intelligent, able to learn on my own (except maybe math). I made good grades in high school and previous college, so I felt I had the basic study skills for everything. So it makes sense to use the technology for as much of the education as I can. Especially in light of other commitments [marriage, three adopted children, work]. (S8)

McCullom (2000) indicated that online students tend to act more independently than their traditional counterparts and suggests this trait is a characteristic of student success. He developed study groups for the required coursework. “The purpose is to train students for the business world where they will most likely work in groups (McCullom, 2000, p. 1). Jones International University indicated that “students value interaction” and has added the opportunity for more interactive chat areas to the institution to facilitate networking (Young, 2000a, p. 2). However, one disadvantage to online interaction is that the written word doesn’t communicate the same things that voice and body language do (McCullom, 2000).

Below is an illustration offered by one of the students that supports that finding.

The only real problem I’ve ever had in an online class was actually a miscommunication. And actually it wasn’t my problem though I was involved, I guess you’d say. One of the other students and I got really close. We exchanged numbers and talked on the phone. We used e-mail to talk a lot and get to know each other as well. My friend made a comment via e-mail in response to a prior posting. I knew what she meant because of our conversations, so when I read the e-mail that’s how I interpreted it. I was really surprised at the responses that were unhappy with what she’d written. When I read it without the background information, it could have been interpreted that way. Though, it is not how I interpreted it or she intended it. It can be a drawback not to see each other. (S8)
This study supported the results of the research by McCollum (2000). Participants reiterated occasions in which they had to be creative and innovative in locating or designing resources for their own success.

**Level of Computer Competence**

In previous research it's been suggested that a lack of computer competence can be a barrier to EDE. Zeszotarski (2001) suggests the ability to use computer technology and to evaluate electronic information has become a basic skill for community college students in both academic and occupational programs. Lever-Duffy (1993) identified students' lack of computer skills as a barrier to successful integration of EDE. Richards and Ridley (1999) cited computer proficiency and comfort as a contributing factor to retention in distance education coursework. They also indicated that students perceived their greatest needs in computer competency to be receiving and transferring files and using e-mail (Richards & Ridley, 1999).

Since the participants' ability to effectively use the computer could impact perceptions and expectations of the services and EDE, the researcher collected these data to determine if it was a barrier. Definitions of computer competency vary depending on the type of degree program or course in which the skills are being used. For this study, definitions of computer competency illustrated in Table 7 were used.
TABLE 7

DEFINITION OF LEVELS OF COMPUTER COMPETENCY

<table>
<thead>
<tr>
<th>Level</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beginning Level</td>
<td>Some word processing</td>
</tr>
<tr>
<td></td>
<td>No previous online courses</td>
</tr>
<tr>
<td>Intermediate Level</td>
<td>Word processing</td>
</tr>
<tr>
<td></td>
<td>Some e-mail use (Eudora, Netscape)</td>
</tr>
<tr>
<td></td>
<td>No previous online courses</td>
</tr>
<tr>
<td>Advanced Level</td>
<td>Word processing</td>
</tr>
<tr>
<td></td>
<td>e-mail and upload/download files</td>
</tr>
<tr>
<td></td>
<td>Previous courses</td>
</tr>
</tbody>
</table>

Each participant completed a survey, electronically delivered, about her/his level of computer competency. The survey asked participants to indicate they had used a computer to do the following: word processing; CD ROM; e-mail programs (Eudora, Netscape); conferencing systems (First Class, Blackboard); interactive video conferencing; World Wide Web; statistical programs (SPSS); spreadsheet programs (Excel); graphics programs (ADOBE Illustrator); authoring systems (Macro Media); programming languages (C++ or Pascal). Responses on a ten-point scale ranged from three to nine with a mean of 5.4. The five most popular skills sets included word processing, CD-ROM, e-mail programs, World Wide Web, and spreadsheet programs. Nine participants self-reported their levels of computer competency as advanced, with only one participant self-identifying skill level at the intermediate level.
Community/Interactivity

The importance of interaction for distance learners – the feeling of connectiveness – is well documented in the literature. Critics of distance learning cite the lack of social interaction among students as a weakness in distance learning (DeVries & Wheeler, 1996; Saba, 1998b; Shale, 1990; Trinkle, 1999). Connection, then, becomes the goal for distance education – connection of learners with ideas, information, teachers, each other – (Gilbert, 2001b) and to an institution's cultural identity (Ehrmann & Zuniga, 2001). However, the online environment can be less intimidating than the traditional classroom, and students are often more candid online (Gilcher, 1999).

To me a key element is the threaded discussions, in a classroom you ask a question and a student answers ... and another student follows up. Then the class ends and it's over. If you weren't there you missed it. With this discussion, it's up as long as the course is in session. (S4)

Logging onto the Web site between midnight and four a.m., long after my workday was over, the kids asleep, and the household chores completed, I printed the “lectures” in the form of text. This allowed me to move around, a necessity because of a bad back, reading the assignment before composing a response to the instructor and the others in the class. (S5)

This is what William Strugatch (1999) called “an electronic simulation of the kind of lively discussion instructors dream about.”

The participation seems to be more focused – as if we’ve all thought about what we’re going to “say” before sending it. I know I’m participating more than I do in a regular classroom environment. Also, I feel like I am receiving more attention. (S9)

Recognizing the importance and the impact of both computer competence and learner-to-learner interaction on the EDE experience, Table 8 summarizes participants' level of computer competency and interaction.
TABLE 8

PARTICIPANTS' LEVEL OF COMPUTER COMPETENCY AND INTERACTIVITY

<table>
<thead>
<tr>
<th>ID #</th>
<th>Level of Computer Competency</th>
<th>Interaction Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>S1</td>
<td>Intermediate</td>
<td>Average</td>
</tr>
<tr>
<td>S2</td>
<td>Advanced</td>
<td>Average</td>
</tr>
<tr>
<td>S3</td>
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</tr>
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<td>Average</td>
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<td>S8</td>
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</tr>
<tr>
<td>S10</td>
<td>Advanced</td>
<td>High</td>
</tr>
</tbody>
</table>

Description of the Setting

CCC was chosen for this study because it has served as a model for distance education for over ten years. CCC has been considered the leader in Oregon among community colleges in EDE. CCC currently has an enrollment of 40,000 students, 11,000 of which are enrolled in EDE. The college offers the largest selection of online courses in Oregon as well as a greater number of services delivered to distance learning students. The college advertises that students "may earn college credit hours and fulfill the requirements for an Oregon Associate of Arts degree or an Associate of General Studies degree by enrolling in courses offered via distance" (Chemeketa, 1999, p. 3). The college also provides a list of services to distance education students, including library and bookstore services (Chemeketa, 1999). The college offers extensive support services to students, including the online bookstore, registration
services, online application process, library access, e-advising, and tutoring (Scott, 2000; Witherspoon, 1997).

Trustworthiness of the Data

Multiple data sources, including individual interviews, document review, student survey of computer competence, course outlines and syllabi, and transcript analysis revealed the expectations of the ten students participating in the research study. The researcher has previous experience, as a student and a distance learning administrator, and brings certain biases to this study, one of which is that distance learning meets the needs of students who might otherwise not attend college by providing access and educational opportunities. As a result of those experiences, the researcher possesses an understanding of the phenomena that enhance her awareness of, knowledge of, and sensitivity to the challenges of EDE. Bender (1993) considers this one of the acceptable limitations of qualitative research.

To ensure trustworthiness, the findings were shared with two groups: a selected panel of distance education experts and the Oregon Council of Student Services Administrators. The panel was composed of three distance educators (one teaching faculty, one administrator for the college’s distance education program, and one state administrator for the statewide distance learning council). Comments from the panel of distance educators confirmed that the findings were comparable to what they expected to hear from students in the electronic classroom and on the campus. The panel indicated the students were representative of the type of learner found in EDE, that the student profiles were comparable to that of the typical distance learner,
and that the range of skill levels was characteristic of many distance learners. The teaching faculty made a noteworthy observation: interdependence of students is more acute in EDE courses than in many of the traditional classrooms; students cannot depend on others to cover their lack of preparedness (McClellan, personal communication, 2001).

To further enhance trustworthiness, the data were presented to the Council of Student Services Administrators in Oregon. This council was chosen to determine the consistency of the data with other college administrators' experiences. The Council of Student Services Administrators, a statewide governing body in Oregon, established that the findings were consistent with current professional literature as well as their own experiences with distance education in Oregon. Three observations are particularly noteworthy from this group – the level of sophistication of the student, the strength of the commitment of the participants to those with special needs, and the research/practitioner dilemma. Council members were surprised at the level of information students possessed regarding the internal mechanisms of the college, particularly administrative systems. Though students did not use the terminology of a student information system or know the names of the systems, their suggestions regarding the levels of services implied a level of sophistication that disconcerted the administrators. The council was pleased at the comments regarding accommodations for those students with special needs and surprised at the strength of this standard in the findings. The third observation concerned the dilemma faced by student services professionals as they seek to provide support to students but have to do so within the institutional philosophy and the practical application of limited funding.
The findings presented in this chapter describe and communicate a student-constructed model of student services for EDE. The following section summarizes the participants with regard to age, majors, computer competency levels, reasons for enrolling in an EDE course, and the personal characteristics the participants indicated and the literature revealed as fundamental to successful completion of distance learning.

Summary: Section One

Section One provided a brief introduction to the setting, an urban community college leading the state in EDE, both in course offerings and in the services provided to students. This section illustrated the trustworthiness of the study as articulated by the participants' perspectives and triangulation of data sources. The intent was to introduce the co-researchers in such a way as to help the reader to better understand the phenomena through the participant perspective.

More importantly, this section introduced the participants of the study. Participants were chosen based on a number of criteria: more than 25 miles from the community college, the instructor was experienced in EDE, the students had more than one EDE experience, and they agreed to participate in the study. Student profiles indicated they were typical, in that they exhibited many of the characteristics described by McCollum (2000): resourceful, independent, and highly motivated. As students they interacted to a high or an average degree during the EDE class, more than six times a week.
Section Two: Research Questions

The purpose of this study was to describe and communicate a student-constructed model of student services for EDE. The following questions guided the design of the study:

- Do students enrolled in EDE perceive a need for student services? If not, why not?
- Which services do students want/need for EDE?
- How do students want the services delivered for EDE?
- If students constructed a model of student services for EDE, what would it look like?

Data Analysis of the Interviews

Since the research used open-ended questions to collect narrative data from a sample of students participating in EDE courses, the quantity of raw data was extensive. Wolcott (1996) suggests that the researcher combine description, analysis, and interpretation in the final report. It was important not only to record the conversations but also to consider all information gathered as having potential impact on the development of a student-constructed model of student services for EDE.

Participants seemed eager to share their experiences with the researcher. The interviews took on a conversational tone with the researcher relating or summarizing information for clarification or as a lead to a clarifying or probing question. The interview protocol was structured with open-ended questions that allowed the participants to respond at length. Participants were prepared for the conversation,
having received a letter from the researcher outlining the topic area and broad
categories to be discussed.

The audiotaped interviews were transcribed for a word-by-word analysis.
Because the participants used variations in terminology, both the transcriptions and
the field notes were examined manually, highlighting concepts as the first step in
analysis. The coding and indexing of the interviews resulted in emerging patterns of
student services perceived by students as necessary for EDE. The coding and indexing
allowed the researcher to reassemble the interviews in new ways, creating themes
(Krueger, 1994). All interviews were tape-recorded. All participants granted permission
for recording the interview for the explicit use of data transcription and analysis.
Demographic information was collected from each participant.

Field notes were made at the time of the interview in order to provide
immediate feedback and to outline the information gained during the interview. NUD-
IST software was used as part of the analysis. This software created a document
database that stored data in textual and non-textual format (Qualitative Solutions,
1995). This database allowed text to be stored, edited, and retrieved; recorded factual
information about the documents, cases, participants, times, and dates; searched for
words and phrases in the text of the document; and automatically indexed them. The
goal was to “make sense of the data,” but research cautions that it is easy for a
qualitative researcher to fall victim to “data overload” (Rudestam & Newton, 1992, p.
113).

Analysis of data took several forms, including hand coding, listening to the
tapes and a review of the transcribed data three times, and the use of thematic analysis
software. Hand coding was an effective way to analyze the field notes and transcripts of the interviews. As soon as an interview was completed, but before the audiotape was transcribed, the researcher reviewed all field notes and began initial coding of responses. The notes were considered an outline of the content of the interview and were consulted frequently throughout the analysis process.

Research Question One

Do Students Enrolled in EDE Perceive A Need for Student Services? If Not, Why Not?

As participants were introduced to the topic of this study, they began to enumerate the services each felt should be provided for distance learners. Because of the affirming responses from participants indicating that services were necessary, there was no need or opportunity to pursue the question of the needs and wants of those who did not feel the support services were required.

Nine participants assumed that support services were necessary for EDE. Each participant indicated that a number of services were required to make EDE acceptable to students and potential students and to ensure the communication necessary for enrollment, classroom interaction, and problem-solving.

I had preconceived ideas about what distance education would be like. I had done my homework and as much research as I could and felt I knew what to expect. It was different than I thought it would be. I'd still do it again, but it was harder to coordinate all the components – not of the classwork but of getting registered, getting the books, getting the coursework done timely, because the local library didn't have any resources on the subject. I will continue to take distance education coursework because it's flexible with my work schedule [two jobs] and family of four and I can make it work around “my loco vida.” (S10)
The whole reason [I] take an online class is because it's convenient. For those of us who work, go to college, have kids, we want to be able to sit down in the wee hours and do what needs to be done — whether that’s posting a homework assignment, ordering a transcript, looking up the class schedule for next term, or registering for the class. So it makes sense to me that I be able to get enrolled, use the library and stuff online as well. (S7)

I'd have found it more convenient to be able to register and pay online. As it was, I told my mom, who lives in Salem, what I needed to register for. She went to the college to get me registered, then called to let me know. I then put a check in the mail and hoped it arrived within the three-day window before I was withdrawn for non-payment. (S6)

When I first took an online course, I was frustrated. I had to be more organized and disciplined than I expected; disciplined to do the homework and keep up. Even though online classes are supposed to be interactive, well, sometimes it was just boring. (S2)

One participant indicated that the current level of services met the needs of a student enrolled in EDE who lives 26 miles from the campus. This student, who was unsure as to whether additional services were needed, made the following comment:

Although I take advantage of the distance programs at Chemeketa, I do live near Salem and attend traditional courses. However, I find the distance courses convenient because I work full-time and can spare only a few hours each day to sit in class. I don't know that additional services are needed. (S5)

During the discussion that followed, she asked a number of questions that seemed to have an impact on her thoughts regarding services needed for EDE. In response to such questions as the following: How would she purchase her books if she didn’t drive to the campus bookstore? How would she make payment for the classes if she didn’t drop off the check when she picked up books? How would she do these things if she lived farther away? The student, upon reflection, made the following statement:

I guess I'm making a lot of assumptions here. Just because I live within driving distance, have a car and a driver's license, I've assumed others have the same
opportunities. But what if I lived in K. Falls instead? I wouldn’t want to drive up here to make a payment. I could mail it, of course, but what about the tests I’ve taken at the testing lab in Salem? How would I do that from K. Falls? Another REALLY BIG assumption I’ve made is that the services I have used – some online testing, advising via e-mail, interactions with classmates and instructors – is that they will continue. If we’re talking about starting services here, I need to be assuming that none of these things exist and I get to decide which of the services I want and need to use for EDE. (S5)

Services provided should be similar to what we have access to on campus. While it might not be delivered in the same way as it would be on campus, it should meet my needs and be easy and affordable and…. But I also don’t think that all the services need to be online. For instance, I read recently about an online graduation. Not interested. I’ll either show up for the real thing or not at all. (S2)

One thing I’d like to point out is that while I’d like the services to be the same as what I’m using [same technology the course is delivered in], I don’t think that’s true. I don’t mind using the touch-tone [system] to register. See what I mean? While my personal preference would be online registration, the other [registration system] works just fine. (S9)

Summary: Research Question One

This section identified the participants of the study by gender, age, field of study, levels of computer competency, and reasons for taking EDE coursework. In answer to question one, participants indicated their agreement that support services needed to be provided for EDE. They further suggested services be equal in quality and diversity to those provided on campus. Participants, however, did indicate that not all services needed to be provided online for EDE students, but that they be available via distance and that the services meet the needs of the distance learners.

Research Question Two

Which Services Do Students Need/Want for EDE?

Participants indicated that support services need to be provided for distance learners. One of the most exciting and interesting findings of the study was a direct
result of the conversations with participants around this question. The concern that emerged throughout was that of providing accommodations via distance for students with special needs. Five participants revealed the need for accommodations for those students with special needs. While none of the students disclosed that their interest was personal, the recognition of and need for accommodations infused the conversation. This feeling of access for all was so powerful that it permeated the conversations, leading the researcher to conclude that it was access for all or it wasn’t access at all.

Participants’ concerns were expressed from the perspective of an individual managing with limited services, or as it was phrased in the words of the participants:

"If I had to find a proctor, go out of my way to pick up the books, go to campus to be advised, what about those [students] with disabilities who’re taking an online class to avoid all of those things? How do they manage? (S4)"

"What about people who have a mental illness that keeps them locked in their houses? What if they’re halfway through a class and then get that e-mail from the instructor that reads ‘The test is at the testing center. Please take it before Thursday.’ It’s not just the nuisance of dealing with the issue, it’s the whole psychological issue. What happens then? Notice I don’t have any answers. I just think somebody needs to be asking the questions. (S5)"

Participants generated an inventory of services they felt were necessary for distance learners. The researcher then further classified them into three categories of services based on Namm and Holly’s (2000) structure: administrative support, individual support, and community support. Because the terminology varied with each participant, students were carefully questioned to determine meaningfulness of the nomenclature used. To avoid responses that were single rejoinders, three or more participants had to reference the service during the interview process.
Participants suggested a number of specific functions that should be routinely accessible via distance. These included many of the "pre-enrollment services" that Moore (2000) identified; these services include access to the application form; registration online; catalog access, including course descriptions and policies; and payment options online. At the most basic level, students indicated access to the application form— as opposed to the ability to apply online. Three participants suggested that it wasn’t really services but access to information delivered electronically that defined the most basic level of student services for EDE students.

Maybe what we’re talking about here isn’t service. At least not in the traditional sense. Maybe it’s about access to information. You know, looking through the catalog for a course description for a college 3,000 miles away, registering online. (S5)

...I’m online all the time, researching this, gathering data for the courses I teach. At first, I was astounded at the information that is out there; actually, I still am. The point I’m trying to make is that a lot of the so-called student services is information that students can pick up and use—or not. Maybe at the most basic level, what we’re talking about is electronic information: about the college, the courses, the instructors, ordering books. (S10)

People looking for a class or information about health issues sign in, find the info, and then decide what to do with it. I tend not to think of that as service—because it’s done without another warm body being there to smile and take the check and tell you your account is empty. You know what I’m saying? If I just log on and find the info, is it really a service? Of course somebody has the responsibility to put the information out there so we can access it. (S9)

The inventory of services generated by participants is discussed within the categories of administrative support, individual support, and community support services (Namm & Holly, 2000). Each section begins with a brief overview of the category followed by the voices of the students to illustrate their own perceptions and expectations of the support services.
Administrative Support Services

In the administrative support category, Namm and Holly (2000) included access to the application, catalog information, registration opportunities, credits and grades, access to information regarding financial assistance, access to books — both library and textbooks, a virtual tour of the campus, and orientation to college. Many of these services are provided by colleges as part of the student information system or are available on a college’s Web site.

*When I first started taking classes at Chemeketa, I was able to print the application [student record form] off the Web and send it in, you know, snail mail. That worked okay, since there wasn’t an application fee to process. I think it just helps to set up the student [record] in the system. Now, I’ve noticed some places are letting students complete the application online and submitting it that way.* (S3)

A second viewpoint of the application process was expressed by a student transitioning to a four-year institution.

*I just had to apply online to State. The application was online. I filled in the boxes with personal information, hit the send [submit] button. They took a credit card number — also online. Though I did worry a lot about giving out my credit card number. But people do it all the time now — they shop online, they buy books online (yeah, I did that, too, without giving it a second thought). Wonder why it was different on the college Web site? I received an acknowledgement from the university almost immediately. It seemed like even before I had a chance to think about it, I received an acceptance — also via distance.* (S2)

Though Chemeketa does not require an application [student record form], nor is there a charge for the application, the data must be entered to establish a student record before the student is eligible for access to other services, including touch-tone registration.

*There was a delay in getting enrolled. I had to fill out the student form, similar to an application, then mail it back to the college. I tried right away to get registered, but my name wasn’t recognized that soon. It took nearly a week for me to be able to*
use touch-tone registration. It wasn't a hardship, you understand. I was just eager to get started, so even a small delay was too long. Also, in the back of my mind, I was wondering why the technology couldn't make this process faster. (S10)

Since I attended [Chemeketa] before I got married and moved here, I was already in their system, so I just picked up the phone and got registered. I wonder what people in New Jersey do when they want to take a class from Chemeketa. (S4)

Another important issue for several students was payment. Having the ability to choose from an array of payment options was important. In terms of technology, this is one of the more difficult and costly services to provide. Security is an important component of accepting online payments. Credit card payments via touch-tone technology are difficult to set up and require compatible technology with the service provider, which may include more than one bank, credit union, or lending institution. All lending institutions may not be local, but national and even international, creating difficulties with compatible software, cable, and phone line issues. Students' expectations, however, were for seamless service.

If I can take a class online, why not make payment that way? Seems like a similar interaction. Or at the very least, why doesn't the touch-tone take my credit card number? I know the technology is available. And the technology is secure. (S2)

Payment has been the most difficult aspect for me. I live, literally, in the middle of the Mojave Desert. To get enrolled and paid within the timeline set — three days — is difficult. I call my mom who lives in Salem, tell her that I just called and registered, mail her the check, and when she gets it she rushes over to drop off the check. (S5)

... I can't just key in a credit card number. I have to write a check and MAIL it to the college. I think the technology is available to support an online payment plan; I use it when I buy books online. Why isn't the college taking advantage of this for other functions? (S3)

I've become so used to electronic payment plans that I was surprised when I registered that I couldn't take care of it via touch-tone. My preference would have been online, so I could print the screen showing I did indeed make payment. Not that I've had a problem, but I could. (S6)
A number of other services were suggested by participants, including testing and test security.

Testing! Online testing — I was so surprised the first time I received an e-mail from faculty saying the test was in the Testing Center. I'm supposed to drive five hours, take the test and drive another five on winding coast roads? I don't think so. It turned out to be an easy fix — someone at the local community college proctored. But still, you know, I had to give up lunch to take care of that, or someone from the college stayed late to accommodate my schedule. Seems like there should be a way for online classes to be online. (S9)

... it only makes me mad. One teacher, I think it was math, made us put in writing saying this is my work and sign our name and send that e-mail. The tests for other classes have been online, and they've been timed. In fitness and nutrition, I had only a short time to complete the tests so if I hadn't studied, hadn't kept up in class, I couldn't have finished the tests in the time allotted. I think timed tests work just fine for security purposes. Maybe because I don't know anybody willing to take the class with me, do all the work just so she can then take the tests for me. (S9)

A number of students talked about access to their credits. This was defined as the ability to access transcripts and grades but more importantly, the ability to access course equivalencies for transfer.

I want to be able to determine a number of things about the course: whether it transfers readily as college-level coursework, whether the community college has an agreement for transfer that is honored by a specific college, and how it will be accepted by the college I transfer to, without calling an advisor. (S9)

How will this fit into my long-term plan? I want to know where to locate that information. Who will accept the transfer credit? Does the college I'm planning to transfer to accept this, or is a lengthy process I'll need to go through and then they still may not take the class?

Many students' responses were framed within the context of their lives. One such typical response follows.

It's not enough to just finish the class anymore. I have to make every minute count. The classes have to fit not only the community college degree but also any (and all) degrees that will follow. I can't afford not to have the credits be used in specific areas on the degree; can't afford to bear "we can't use that class for your speech but
only as elective." And it's not even the money, though education is costly. It's time. As an older adult, I don't have the time to waste. As a parent of four, I don't have the money to waste either. (S10)

Access to textbooks and resource materials was also a primary issue with EDE students. Students devised a number of innovative methods to arrange for the purchase of texts and to gain access to library resources. Some of these were very creative; many used technology to access online book sellers; and all indicated resourcefulness on the part of the students.

I have not got my books through the college – through the library there or the bookstore. I just searched the Web and found the best buys. Usually through VarsityBooks.com or Amazon.com. The only problem I've ever had was when the books were backordered. That only happened one time and was a week late, so it was manageable. (S8)

Living in a large urban area, I've found books in local bookstores. That way I don't have to worry about their arriving on time. I found that ordering online or through the college bookstore, I wonder if the books will arrive timely. Occasionally, the text is not something normally found in Barnes & Noble's, so I do order elsewhere. When I do order online, I've noticed the cost of shipping usually offsets the cost savings of the book. (S3)

I have tried going to places like Follett.com and those types to check prices, but the local college bookstore beats their prices – which I thought was interesting. They advertise better prices but I haven't found that to be true for the books that I needed. I mean it may not be true in every situation ... (S7)

Varsity [Books.com] seems to get the book lists directly from the colleges and then posts them by college. I'm taking a class from Linfield College, and they teach at the local community college, so that bookstore there doesn't carry the texts. So I went to Varsity[.com] and found the book lists. While this wasn't specifically for online learners, I thought it was a good idea for all distant learners – giving the book lists online booksellers so students anywhere can access the list and make a purchase from anywhere. (S9)

I got the information about the class online from the instructor. It was all online, you know, I got what books were necessary out of the course catalog or whatever [syllabus] it is that they give you for the online courses... and then going to the bookstore. I physically went to the bookstore to get the books. (S6)
Students have some expectations of being able to complete the "pre-enrollment functions" (Moore, 2000) prior to participation in the course. These include catalog information, the application process, general information about the college, and the ability to register via distance. Participants indicated the ability to access services does not have to use the same technology by which the course is delivered, though the initial expectation is that it be the same. For instance, they are willing to register via touch-tone telephone when taking a course delivered entirely through EDE.

*I used the telephone to get registered after I sent in the application [student data record]. While it worked just fine, my first thought was it was an online class, why couldn’t I register online? (S3)*

*I didn’t think anything of using the phone to register for an online class. At first. Then I started to wonder and worry about what the other expectations might be for not using the same technology to deliver the course. Know what I mean? If I can’t use the computer to register, what about other things - like talking (and I use that term loosely) to the instructor, taking an exam, paying for books? (S1)*

**Individual Support Services**

Included in this category, that Namm and Holly (2000) called individual support, are accommodations for special needs, advising, self-assessment including learning styles, transcript evaluation (degree audit), personal counseling, and access to job placement. The category was developed around the concept of those services that must be customized to be effective for individual students. For example, in administrative support services a student may gain access to information regarding the transferability of credit. If, however, that student wanted to know if her/his credits fulfilled the specific degree requirements, that information would be customized to that specific student. The software would view an individual transcript; compare it to a
matrix of coursework, pre-approved and entered into the system; and determine if there was a match. Many institutions call this the "degree audit process," tailored to each individual student pursuing each degree.

The issue of advising generated a great deal of conversation. Each participant shared a story about reaching an advisor to discuss the transferability of a particular class, about whether the course met a specific degree requirement, or about whether this was the most appropriate class for the content or knowledge needed for a specific degree. The instructor could have answered the latter comment, but students felt asking an advisor gave them a greater opportunity to ask deeper questions of the instructor regarding content and subject matter of the course. A number of concerns focused on more traditional advising issues, such as course equivalency, transferability, workload, and content and subject matter.

The college has some of the most caring staff I've never not met. But sometimes trying to reach an advisor to ask about a class is not quick or easy. I got a good example. My major has an internship class that is required. I have worked in the field for 13 years. I just wanted to have a conversation about the possibility of not taking an internship. I e-mailed, called and left messages, even tagged a request onto the end of a paper I posted. It took a long time. Now, except for a conversation with the advisor, whether written or oral, I don't know how else that information could have been delivered. Once I had the discussion, it went well, got the paperwork started; it even worked to my advantage. But was there an easier way to have that conversation? Maybe an online chat with the advisor at 6:00 p.m. or counselor on call? I don't know what the answer is. (S6)

I'd like to be able to go online and discover that this class transfers as college level across the nation at 26 different colleges where articulation agreements have been signed. To find out how this class fits into that degree or this degree or that college. (S2)

It was okay when I first got started. I didn't know I needed to be asking about such things as course equivalency and transferability, so I didn't realize that the information wasn't out there in a nice, neat package for me to review. But now that
I do need to know, I'm wondering why course equivalency tables are not available. I have seen them on other college Web sites. (S1)

A big issue for me is advising. As a self-starter ... I am willing to research the information I need [in order] to be aware of how this class fits with the degree I'm pursuing. But I don't always find what I need on the Web ... the Web site of the college, or the one I'm transferring to. It's better now than it was, but it isn't comprehensive. For instance, I'm considering Boise State and University of Texas. I've researched their catalogs online, searched their sites, but still don't have the information I need to know how this course will be accepted for transfer. To find that, I have to call. Which is okay, but then I worry about the quality of the information I received. Did I connect with an advisor who knows what he/she is doing? Is the advisor a good one? Will he/she remember confirming that course for transfer when I do get there? I guess I just want something in writing, via e-mail or a course equivalency chart on the Web site I can print and add to the folder of information I have. (S8)

I got the information I needed but had to search for it ... on campus. I searched the Web first, then started calling around. My instructor put me in touch with an academic advisor. Once I made contact, I got answers. I'd like to see one point of contact for distance learners. One place to go, one person who will search out the answers if [he] she doesn't have them. (S3)

Academic advising has been the single most frequently utilized strategy to increase retention (Beale, 1973; Crockett, 1988; Forrest, 1993). It is critical that student services professionals consider this aspect when they plan for services for students enrolled in EDE.

I gave serious thought to changing schools when I couldn't find the answers to my questions regarding how this class would meet the requirements at a four-year college. But decided the next place might not have it [information] posted either. And it's working out, now that I know who to contact. (S7)

It occurred to me once that other schools might have more information on their Web about transferring credits and stuff [other advising issues]. But I decided to stay with it because the people I'd talked with tried to help and because they just keep getting better. If I changed schools, who knows what I'd lose in credits and time. And it still might not transfer to someplace I go. (S3)

Participants of this study defined self-assessment in different ways. Nine of the ten participants talked about an assessment of skills to determine the probability of
success in EDE. For these participants it took the form of a self-scoring test that assessed skills and abilities regarding computer literacy, practical hands-on computer skills, as well as preferred learning styles, motivations, and student characteristics beneficial in taking EDE coursework. Participants felt they might have been better prepared for the rigorous timeline of the course, the need for discipline in maintaining the schedule, and the necessity of being self-motivated.

I had my own preconceived ideas about distance education before taking the class. It was different than I expected. I think if I'd had Frequently Asked Questions or a short quiz on my computer skills and my ability to be self-motivated, it would have helped. Now don't get me wrong – I'm doing okay, but it's not what I expected. (S10)

In a regular class, if I'm not prepared for that day, I don't say anything. That doesn't work in this environment. Maybe it's that all assignments need to be typed and posted, but it seems like I have to participate or someone in this class doesn't get the chance to respond to me. Am I affecting their grade if I don't? I don't think I expected the distance classes to be as demanding as they are or to require the discipline they do or that I would feel so obligated to others in the class to get my own work done. I'm a better student, I think, since taking a distance class. But, and this is a big BUT, I wish there'd been a quiz about how I learn, how I like to learn – I think that would have helped me to be better prepared for the demands of this method of learning. Then again, I might not have taken a distance learning class, and I have really benefited from the experience. (S1)

Three participants defined self-assessment as learning styles, particularly as it pertained to their own ability to interact in written rather than oral form. Two of the participants indicated they worked harder to overcome their innate preferences for verbal interaction with classmates. Three others, knowing they were auditory learners, developed a method of interacting that allowed the preferred learning style to be dominant.

I was very concerned when I took the first distance class. I like to think out loud. That's how I learn. I sort of thought that I'd just think by typing and then realized I can't type that fast. Nor would I want my initial thoughts – in their jumbled
form — to be ‘out there’ for all to read. I have an expectation that anything written be in better shape than the spoken word. I found I thought out what I wrote more carefully but still needed the verbal cues to determine what it was I really thought. In one class, I was able to call two of the other students in the class before I wrote out my responses. In another class, I found I had to locate others who were willing to be a part of a long-distance study group. In one instance, it was my family who got used to dinner discussion about the sociological aspects of criminal justice. Whatever — it seemed to work. (S7)

I knew before I signed up that I learn by talking. So I included that information in the biographical sketch I had to write to the class. There was another student in the class who felt the same way, so we exchanged phone numbers and traded off calling each other. It wasn’t easy coordinating schedules, and the costs did add up over time, but we both found it beneficial to have that one-to-one interaction — verbally. (S5)

While I don’t talk much in a regular classroom setting, I do need to think aloud. I’ve heard that’s part of being an extrovert. Whatever the reason, I solidify my opinions by sharing them — actually, it’s more like I make them up as I go along. I also learn in this manner — sorting and consolidating and compressing information until I realize I know the information. Usually in a regular classroom, I pick out those with the glazed look and start a conversation and then, if it’s been helpful, we start a study group. That’s more difficult with EDE because I can’t see the glazed look. Since I live not too far from CCC, I’ve been able to set up a study group with others in the regular classroom. It’s not exactly the same as the online class, but close. (S6)

Four participants included such individualized functions as transcript evaluation (degree audit) in the definition of self-assessment. These participants were primarily focused on the ability to determine their progress toward the degree, without contacting an advisor on campus with each question.

When I think of self-assessment, I think of all the things I need to know — about me and my place in the class, in the college. For instance, my transfer credits. I need to know which courses meet which requirements for the degree in order to self-advice. While advisors do a great job of that, it is MY degree, MY graduation (or lack of) — not theirs. So I need to be able to tell if they’re right. Or at least ask intelligent questions about why this course doesn’t fulfill that requirement. To do this, I need access to ASSIST [California community college’s online degree audit system] or something like it. (S10)

The first college I attended did a degree audit on my transfer credits. It was helpful to see where the college thought the credits would fulfill requirements. I didn’t always
agree, but it gave me a starting point to work from. I think distance learners need access to similar services – without having to go to campus or wait eight weeks. Why can't we use the technology for the more obvious equivalencies – the first level of college writing anywhere equals the first level of writing here? While this wouldn't solve all the issues surrounding transfer credits, it might give us [students] a chance to ask informed questions. (S9)

What I haven't found online that would be helpful is access to a program that evaluates my coursework [degree audit option] – you know, where you type in your classes and grades and it [the technology] indicates which requirements you've fulfilled. I have a number of credits and would like to know where I stand. Of course, I can call an advisor, but they aren't always available and sometimes don't want to take the time on the phone to review it, and it takes a person more time than it would the technology. (S3)

I want to key in my completed coursework and then let the machine keep a running total of what I've completed, which coursework fulfills which degree requirements and what I still need to progress. Seems that should be do-able with today's technology. (S2)

Community Support Services

At the 2000 NASPA conference, Namm and Holly (March 2000) indicated that community support services might include faculty meetings with student representatives, study groups with chat rooms, directory of services (math and writing clinics), alumni association meetings online, bulletin of events, online student and college publications and links to jobs, scholarship information, and library services.

Participants in this study indicated a number of services they felt would be of benefit to distance learners. These included a directory of and access to services (writing center, math clinic, and tutoring), college publications, advanced library services, links, chat rooms, and job placement opportunities. Participants were less concerned with student clubs and organizations, the bulletin of events, and had no interest in athletics or alumni associations.
The focal point of this study's participants was for access to services they might need and were now seeking out in their own communities: finding a tutor or test proctor, access to a writing center and math clinic that would allow interaction. Participants have met their own needs in these arenas as the needs arose but indicated these were services it would be helpful for the college to provide. At the most basic level, it might be a link to online tutoring, such as Ask Jeeves for how to work an algebra problem or the ability to critique an essay. At the more advanced level, participants suggested it be access to a live tutor for assistance with more difficult problems.

I have been really lucky. When I needed a tutor for the math class, my husband said he was really good at math. Well, he's not but he helped me with the basics, and someone I work with was able to help with the rest. But it wasn't easy, trying to fit his schedule and mine together. I felt so thankful he was willing to help that I tried really hard not to inconvenience him at all. If he'd been a regular tutor, there was at least one time I would have asked for more help. (S4)

I work with a doctor who is a mathematical genius. He can look at a problem and give you the answer. And he's right! He was able to assist those few times I wanted to be sure I was on the right track. (S10)

I see it this way. The college provides a basic level of service, say tutoring. Maybe it's a link to a service like Ask Jeeves or MathTutor or one of the paid teaching assistants who will review and critique my writing assignment. I use it as I need it, or it's recommended by the instructor. The next level might be logging into a site where the tutor uses technology to look over my shoulder at the problem I'm struggling with. Then maybe providing access to a live tutor during certain periods of time, say 6:00 - 8:00 three nights a week. I pay the phone call and have the opportunity to talk with a real person who can say, "This is where you're getting off track." Or I pay the cost of the tutor because I need more, very specific help than can be done in a few minutes. But the college has determined he/she is qualified, so it won't be a waste of my money. It might be that the student completed this same class with high marks and is recommended by the instructor to tutor. (S9)

I've been thinking about how the college could provide distance learners with some of the same resources they provide on campus. I miss having access to the writing center where an instructor will review my paper and make constructive remarks. Or I could go to the math lab and get help with a particular problem or a whole chapter.
Maybe a tutor on call—you know, between certain hours you contact a tutor via a
generic e-mail account or by phone to discuss the problem. For me what's worked
has been to stay in touch with an instructor from a local community college. I took
the first of the sequence with her, and she's been willing to critique my papers for the
other classes. But it is a really small, user-friendly community college, and they can
do that now. (S5)

I visualize these services [tutoring, writing center, math lab] as stages. Something
online that would just explain to the student how to work the problem. At the next
level, for the student who needs more interaction, the opportunity to interact with a
tutor either online or by a phone call. I have more trouble visualizing this component
—there are times I just want someone to TELL me what I need to know. Then,
for the student who really needs more help, more face-to-face explanation, maybe the
college hires local tutors. Of course, the logistics, coordination, and training for these
tutors could be a nightmare depending on where the person is located and how far
from any college campus they might be. (S8)

College publications include not only the college catalog but also student
handbooks, orientation guides, study guides, and policies and procedures. Participants
indicated they felt they had less access to this information than students attending
regular classroom instruction did. Much of the information is not available online, and
what is available is not always current.

Summary: Research Question Two

Eight of the ten students suggested the basic level of services should be
provided for EDE students. All students could utilize these services, not just those
enrolled in EDE. It was felt that with the technology currently available, students
could access grades and transcript data without being enrolled in an EDE course.
These findings support the research of Namm and Moore (2000).

Table 9 illustrates the services the participants in this study indicated should be
provided. A more detailed description of the levels will be offered in the section
entitled "Research Question Four."
Research Question Three

How Do Students Want Services Delivered For EDE?

Some participants suggested that the delivery of services – and the method of delivery – is implied by the very nature of the phenomenon – electronic distance education. That is, participants expected to access services, communicate with class members and instructors, and review grades using the same source with which they participated in the class. Again, participants’ comments regarding how the services should be delivered reflected the idea that the current technology provided for instruction should be the same conduit via which services should be delivered.

Taking a course electronically, I would expect access to the resources to be the same way. Doesn’t it make sense that when you take an online class you expect to find all that you need? To show my naiveté, the first time I got an e-mail from the instructor informing the class that the test was in the testing center, I was stunned. I had an online class and the tests were online, so I never gave a thought to … that maybe everybody didn’t test the same. I immediately contacted the instructor, and we worked something out with a proctor at the library. But I certainly learned to ask that question right away. (S7)

My initial reaction was that it would all happen the same as instruction – online. Those were my unspoken expectations. It made sense that the college would use the same technology for everything: go online to register; take tests online; and interact online with advisors, counselors, and tutors. I’m not sure when I started to realize that I’d registered using a telephone, that I mailed the payment, called to discuss any concerns with an advisor or instructor. Even as I realized this, it occurred to me it would be simpler and more convenient to take care of everything online. (S3)

I made it work as is. I had to download the application, fill in the blanks, and then snail mail it to Chemeketa. It took days before I could register. It would have been more convenient to fill in the blanks and send it electronically – and less time consuming. (S10)

What about books and library access? How would I get the materials I need for the course? Well, I could use the local library as I have done on numerous occasions. ‘Course there is always Amazon.com and VarsityBooks.com. Yeah, okay, so there are different ways to still gain access to the services. It would be more convenient to do this stuff online rather than piecing together resources. (S2)
there are different ways to still gain access to the services. It would be more convenient to do this stuff online rather than piecing together resources. (S2)

How else would I get registered? Oh, well, I guess the same way I do now — using the phone-in system the college has. But I worry because there is only a three-day timeline for CCC to receive the payment. Coming from Pennsylvania via snail mail, well, it may not make it. It always has, but ... another thing that just occurred to me is some places take a credit card number over the phone. That could work too. (S3)

TABLE 9

STUDENT PERCEPTIONS OF STUDENT SERVICES NEED OR WANT FOR EDE

<table>
<thead>
<tr>
<th>Administrative Support</th>
<th>Individual Support</th>
<th>Community Support</th>
</tr>
</thead>
<tbody>
<tr>
<td>Application for admission</td>
<td>Individual accommodations for special populations</td>
<td>Links to services</td>
</tr>
<tr>
<td>Catalog</td>
<td>Ability to communicate with instructor and other students</td>
<td>Library access</td>
</tr>
<tr>
<td>Grades/Transcript</td>
<td>Access to contacts re: troubleshooting and problem-solving</td>
<td>Interlibrary loan online</td>
</tr>
<tr>
<td>Registration</td>
<td>Technical support</td>
<td>Access to reference librarian online</td>
</tr>
<tr>
<td>Payment online</td>
<td>Access to resources</td>
<td>Access to full database services</td>
</tr>
<tr>
<td>Virtual tour of the college</td>
<td>Tutoring, math clinic, writing center</td>
<td>Bulletin of events</td>
</tr>
<tr>
<td>Bookstore access</td>
<td>Online job placement, application, and referral</td>
<td>Specialized information</td>
</tr>
<tr>
<td>Online testing – self-assessment</td>
<td>Personalized electronic advising and ability to determine course equivalencies and transferability to specific colleges</td>
<td>Drug and alcohol issues</td>
</tr>
<tr>
<td>College publications</td>
<td></td>
<td>Discipline-specific links to resources</td>
</tr>
<tr>
<td>Program brochures</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Personalized financial aid information</td>
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</tbody>
</table>

With that class, everything I did was online, including testing. But I had to take my son to the college to take the placement test. ... seems like we should be able to be placed online if I can take a test for history online. (S7)

How would I stay in touch? Who would I contact? It would be like returning to correspondence where a box of stuff arrives and you're expected to read it, understand it, or teach it to yourself and then take a test. It takes a special kind of person to do that. Even EDE takes a high level of motivation and dedication, and
[It was] interesting that I had to register via telephone and then mail a check. [I] expected that it would all happen online – like the coursework. Of course, that was the other interesting thing – my son has been taking online courses because he dropped out of high school, and ... I had to physically take him to [another college] when he took their online class – for testing. That surprised both of us. (S7)

I had to take my son in to talk with an advisor about the courses he'd take and if they'd transfer. I was able to do that online with a lady from OIT whom I've never met. But radiological technology is such a specialized field that it's easy to advise from a distance. I do have some concerns about my son because, both at [another two-year Oregon college] and the college I've just gone in and signed him up for courses that will transfer, and nobody has said anything about advising him. (S7)

I use the online bookstore at OIT for the radiological textbooks. But I use whatever is available for other, more general texts. I also use local bookstores – as long as it's convenient; that is, I'm already out and about. I like just ordering it online and wait for it to arrive. ... waiting is an issue, though. How long does it take to arrive? Is it backordered? What if it is out of stock? I've had really good luck, but I always wonder. I can't wait till e-books are available – and affordable – then I can order it online, give them a credit card, and download it to my PC. (S7)

I received a CD-ROM as part of a prior course. It was helpful for the class, but I wondered why I couldn't access it from the Web. Surely, the information could be made available for download through an Internet link from the home page of the course, as opposed to waiting for the CD-ROM to be delivered? Again, my expectations are to use the same technology in which instruction is delivered. (S7)

Summary: Research Question Three

Responses from participants indicate there is an expectation that the services for EDE be provided in the same format as the method of instruction. They also suggest the services need to be equal to and of the same quality as those traditionally delivered. While students enrolled in EDE seem to be resourceful at “making it work,” they would like to use electronic technology to access student services.

However, participants recognized that delivering services electronically is not always feasible. In some instances, the Web may not be the best forum for delivering services.

Upon reflection, the participants were most concerned that the services be available. If
they had to register using the automated touch-tone system rather than using Web registration, that was acceptable. The core feature was that services be delivered via distance.

Research Question Four

If Students Constructed A Model of Student Services for EDE, What Would It Look Like?

Participants of this research study indicated there is a need for student services for EDE. They also suggest the services need to be equal to and of the same quality as those traditionally delivered. Participants developed an inventory of services to be provided for EDE. They further categorized the services into three levels, and in doing so, they created the framework for the model of student services for EDE. To attain a place in the inventory of student services, each support service must have been designed by three or more of the participants.

Initial responses from participants indicated that the services should be provided in a format similar to that of the instruction. However, upon further reflection, participants indicated services could be provided in a variety of ways as long as they addressed the two most critical components: they be accessible at a distance and they meet the needs of the EDE students.

Participants defined three levels of Access, Interaction, and Independence that categorized student services for EDE. Participants indicated that at Level One, Access was the critical element. An example illustrating the three levels of the application process follows. At the most basic level, Access, students locate the application (student data record) form on the college's Web site, print the form, fill in
application (student data record) form on the college's Web site, print the form, fill in the blanks, and mail it back to the college for processing. At Level Two, Interaction, the application would still be accessible on the Web site, but the prospective student would have the option of submitting it electronically. At Level Two the information is sent to a generic e-mail account that is sent to an admissions clerk for re-entry into the student information system. There is still a short delay before the student is entered into the system and able to use touch-tone registration. At Level Three, Independence, when the student enters the data, they are sent directly to the student information system, and the student is eligible to register immediately. This level requires the greatest commitment on the part of student services professionals in terms of monetary resources, cost effectiveness, and human resources. It also provides the greatest level of interaction between students and technology, allowing students to be engaged in doing as much as they can for themselves.

The researcher further categorized the levels — Access, Interaction, and Independence — by using the organizing principles set forth by Namm and Holly (2000): administrative, individual, and community support. Together these three levels and three categories form the model constructed by the researcher and co-researchers. These findings are of great importance to student services practitioners and have implications for future practice. It will be of benefit to practitioners making decisions about using technology to deliver student services to EDE students.

Accommodations encompass and infuse the model because participants felt strongly that access must be provided for those students and potential students with special needs. While none of the participants indicated first-hand knowledge of special
needs, each had a story of a friend or colleague and the resourceful way in which he/she accessed and utilized services.

Table 10 provides a visual summary of the preceding narrative. It illustrates the support systems within the three categories — administrative, individual, and community — and categorizes them within the three levels defined by co-researchers: Access, Interaction, and Independence.

**Level One — Access**

Conversations with co-researchers focused on Access as the primary concern of the first level. One of the findings indicated a greater openness of sharing and sensitivity to those with special needs. Concern was expressed by fully 50 percent of the participants about providing access to those with special needs who might not gain access to a college education except through distance education. Their concern expressed itself in storytelling of people they knew or knew of who might require special accommodations. At each level the emphasis was access for all, even if accommodations were needed to make it so. The participants' own words are used to illustrate the significance of this concern.

Level One provides basic services to students enrolled in EDE coursework. Such administrative support services include "pre-enrollment services" (Moore, 2000) such as the application process, the catalog online, access to grades, and registration procedures. Individual support services includes accommodations for students with special needs, the ability to communicate with the instructor and other class members, and technical support. Community support services includes chat rooms, particularly
to promote interaction among class members, links to other services and resources, and access to basic library services. Basic library services were defined by the participants as access to an online catalog and the opportunity to download the forms to interlibrary loan.
## TABLE 10

**STUDENTS’ EXPECTATIONS OF LEVELS OF STUDENT SUPPORT SERVICES FOR EDE**

<table>
<thead>
<tr>
<th></th>
<th>Administrative Support</th>
<th>Individual Support</th>
<th>Community Support</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Level One</strong></td>
<td>Application – access to the form</td>
<td>Accommodations – Ability to communicate with instructor and class</td>
<td>Links to services</td>
</tr>
<tr>
<td>Access</td>
<td>Catalog</td>
<td>Technical support</td>
<td>Library access</td>
</tr>
<tr>
<td></td>
<td>Grades – via e-mail</td>
<td></td>
<td>Chat rooms</td>
</tr>
<tr>
<td></td>
<td>Registration</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Level Two</strong></td>
<td>Orientation</td>
<td>Accommodations – E-advising</td>
<td>More advanced library services</td>
</tr>
<tr>
<td>Interaction</td>
<td>Financial aid application – access to the form</td>
<td>Credits – information about how the credits will be transferred, course</td>
<td>Interlibrary loan online</td>
</tr>
<tr>
<td></td>
<td>Tour of the college</td>
<td>equivalencies, ASSIST</td>
<td>Door-to-door delivery</td>
</tr>
<tr>
<td></td>
<td>Bookstore</td>
<td>Access to applying for jobs online</td>
<td>Advanced links to resources – discipline-specific</td>
</tr>
<tr>
<td></td>
<td>Online testing</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>including self-assessment</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Level Three</strong></td>
<td>Program brochures</td>
<td>Accommodations – Personalized advising</td>
<td>More advanced library services</td>
</tr>
<tr>
<td>Independence</td>
<td>Credit bank publications</td>
<td>Personalized evaluating</td>
<td>Access to reference librarian online</td>
</tr>
<tr>
<td></td>
<td>College publications</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Student handbook</td>
<td></td>
<td>Access to full-text databases</td>
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<tr>
<td></td>
<td>Graduate and retention data</td>
<td></td>
<td>Bulletin of events</td>
</tr>
<tr>
<td></td>
<td>Full online application, information, troubleshooting</td>
<td></td>
<td>Specialized information:</td>
</tr>
<tr>
<td></td>
<td>financial assistance</td>
<td></td>
<td>health issues and drug and alcohol info</td>
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</table>
Administrative Support Services

Participants defined basic student services in much the same way as the pre-enrollment functions were defined by Moore (2000). One administrative support services function is access to the application form. For many of the participants this meant being able to download the form, fill in the blanks, and mail it to the college.

Participants ranked access to the application [student data record], access to the catalog information, receiving grades online [via e-mail], and the ability to register via distance and to make payment online as the most needed services.

When I think of the basic services, I think of the catalog, applying for admission, getting registered, getting grades. I just need to be able to do all those things in order to continue taking online coursework. I used the phone to get registered, filled in the application that I downloaded from the site, and then mailed it in; the instructor sent me grades via e-mail. So I think the basics are being done really well, using a variety of modalities. Now, I'm not saying I don't have ideas as to how to make it better, but at this level, it's working. Also, when I first started taking distance education classes, I wasn't very technologically sophisticated. I might never have found my grades if I'd had to search the college Web site. Now? Well, it would be a bonus to access my transcript online. (S9)

When I first started taking classes at Chemeketa, I was able to print the application [student record form] off the Web and send it in, you know, snail mail. (S5)

CCC doesn't really have an application process, so this was fairly simple. I searched the Web site for the form and printed it. Then I completed the form and mailed it in. When the data was re-entered, I was able to use telephone registration. (S7)

Getting grades is really important to me. My employer reimburses me for some of the coursework, and the sooner I have the grades, passing of course, the quicker I receive the money back. Instructors have been good at sending the grades via e-mail. But once there was a discrepancy. What the instructor told me was not reflected in the report card I received three weeks later. That started a flurry of phone calls to the instructor. (S10)

Being able to access catalog online is absolutely critical. It provides course descriptions, policy information, degree requirements, resource information. I printed the pages I thought might be pertinent later. (S3)
Individual Support Services

Participants discussed at length the need for and access to accommodations for students and potential students with special needs. Five participants referred to the need for accommodations for those students with special needs. While none of the students indicated that their interest was from first-hand knowledge, the recognition of and the need for accommodations infused the conversation. A number of participants indicated this was an area of concern and should drive the technology for distance education, creating access for all. This finding supports the recommendations of Association of Higher Education and Disabilities (AHEAD), a national organization helping to meet the special needs of students. At the most basic level, participants were concerned that the technology be user friendly, particularly text readers for visually impaired.

One thing I noticed when surfing the Web was that text only was not always an option. I know someone visually impaired who relies heavily on his text reader—and those things just don't work on graphics. How does someone like Bill get the information he needs for the class? (S4)

Distance education has given me a chance to pursue educational goals that might otherwise have been impossible. I had to work to keep the insurance, health coverage and expensive medications, so I didn't expect to realize this dream. This has provided a way to keep my job, my insurance, and maintain my health. I avoid the stiffness I experienced sitting in class for hours, carrying a knapsack of heavy books, walking all over campus, and the pain of taking notes. (S7)

...a lot of people take distance education classes so they don't have to leave home—because of illness or being disabled; how do they get all the info they need? How hard it must be to have to take tests at a nearby library or high school, especially if you thought taking it online meant it was all online. (S9)

One of the students in class last year mentioned she had a low vision problem and had such difficulty with sites that did not have a text only option, and sometimes even then. Said she tried to use a reader but the pictures kept getting in the way. Now, I'm not really sure what that means, but it seemed to have a big impact on
her work and the amount of time she spent on the classwork, to say nothing of her frustration [level]. Sometimes it [her frustration] was evident. (S2)

Community Support Services

One of the most important issues for participants at the first level in the category of community support services are access to library services and links to resource materials and services. Access to library services was determined to be the opportunity to locate books and resource materials pertaining to the coursework. It also includes access to any of the materials the instructor required for the class. What remained undefined at this level was the way in which students might access the information.

The instructor provided a list of reading materials, all of which she put on reserve in the library. A thoughtful gesture but useless to me more than 200 miles away. I was able to take that list to the local community college library, and they provided most—not all—of the materials and offered to interlibrary loan the others. I had the local college library to help. What did others do who don’t have a college nearby? Some of this material isn’t likely to be on the shelves of the local community library. (S3)

I’ve been able to access the local library’s card catalog online to determine whether or not the materials I need are available. However, with a subject matter like fire science, there isn’t much on their shelves. I have been very fortunate in that the fire departments are willing to share with one of their own. Even the instructor sent me his copy of a book that I just couldn’t find in Pennsylvania. While this was helpful, what if two of us needed that textbook? Where would the other find it? Seems like access for distance learners to texts, whether library books or not, could be online. Yeah, I know there’s this big discussion about copyrights, but something has to change if this medium is going to work. And it certainly looks like a lot of people are interested in learning without the walls. (S10)

As a go-getter I’m really good at finding what I need. But there are some things that make life easier as a student. Having some pre-determined links to some student services is one. A way to locate library services or the tutoring center without searching for it. I know some of this is on the college Web site but it isn’t always in a logical place. (S3)
Summary: Level One – Access

In this section, participants defined the most primary function as having access to those functions necessary to distance education: the application process, registering, and library and text services. The most basic element at this level was called Access. In its most primitive and yet most inclusive meaning, participants talked about access for all or it wasn’t really access at all. Participants talked at length about students with special needs and how those needs could best be addressed by technology. As one student summarized the issue:

How does someone like Bill [a visually impaired student] get the information he needs for the class? (S4)

Fully half the participants expressed concern regarding access for all distance learners. Each offered comments and suggestions on how to address some of the unique needs of these special learners. This indicated a greater openness of sharing and sensitivity to those with special needs than anticipated at the onset of this study. A side effect of the concern regarding access for all has resulted in storytelling about the needs of special students being unmet and the use of technology.

On a more pragmatic note, the basic functions defined at this level included access to the catalog and the application process, the ability to register from a distance, access to online library information, and access to grades in some form. Many suggested the e-mail received from the instructor at the end of the term was adequate. Participants indicated the ability to have technical support, should it be necessary, as a critical component of the distance learning experience. Also viewed as essential was the communication with the instructor and classmates.
**Level Two - Interaction**

Participants indicated that at Level Two the emphasis should be on Interaction – between the student and the technology. Services should include the opportunity for distance learners (and campus-bound students) to interact with key functions of the college, including orientation to the college, a virtual tour of the college, more advanced library services such as interlibrary loan online and door-to-door delivery, and advanced links to resources.

At Level One, participants emphasized concern that consideration be given to those with special needs to ensure access was provided for all – or it wasn’t considered access. At Level Two, participants focused on ensuring that the technology was adequate to allow for interaction with colleagues, the instructor, and the technology itself. This was perceived as a way to gain access and to interact with technology.

**Administrative Support Services**

Included in this category at Level Two are such services as college orientation, access to the financial aid application, a virtual tour of the college, bookstore, and online testing including self-assessment. Participants of this study ranked online testing, access to financial aid application, and online payment as the top three services to be provided in this category at Level Two.

Testing was cited by six of the ten participants as the first service to standardize and make available. Surprised at the number who considered online testing to be a student service rather than a natural extension of the classroom, the researcher asked the participants why they considered it to be a service rather than a course requirement.
Well, I guess I'm thinking of the times I took the exam at the Testing Center when I was taking a class on the campus. That seemed to be part of the student services. (S8)

So many instructors are moving away from testing in the classroom that I've begun to think of testing as separate from the classroom environment. Maybe I'm influenced by the fact that I've had to get a proctor for some of the tests I've taken through distance education. (S6)

While the first concern was testing for the coursework they were enrolled in, other issues around self-assessment were discussed.

... I'd like to be able to determine my learning style via computer. I think this would be really helpful to know for the distance learner. Should an auditory learner take online classwork at all? Is it more of a hindrance than a help to finishing their degree? (S7)

Well, in psychology we were studying personality types. One of the others [students] did a paper on the interaction of personality type to success in certain types of college classes. I thought it would be interesting to know if my personality type might be part of the reason I struggle with some classes. (S2)

Online payment is an ongoing concern for a number of the participants. Several suggested they are taking a chance by enrolling and then putting the check in "snail mail" (S10).

You wouldn't believe the games I've played to get enrolled and then get the check to them within the timeline. I call up and get registered, send the check to my mom, let her know I mailed it so she'll know how long she has to get the check to the college. When she gets it, then she rushes over to make payment — we hope it's within the five-day timeline. (S4)

I find it interesting — and not in a good way — that I can get registered by phone, talk with my professor over e-mail but still, STILL, have to use snail mail to make payment. If the technology is available for business and industry why not for education? (S1)

Another key area for the participants of this study was access to financial aid information, including the application form, but more importantly student-specific information that could be shared between student and college.
What I really want is to know if I'm eligible for any kind of financial aid. I sent the paperwork off electronically and knew really quickly, but I've noticed the college doesn't get the information nearly as fast. It makes it difficult, to say nothing of time consuming, waiting for them to get the info to tell me what I'm eligible for. Seems like there should be a way for both of us to access that through a central clearinghouse of some kind, cutting down on the time. (S10)

Living in the middle of nowhere as I am right now, I had to have the FAFSA sent to me because I couldn't find the form I needed in the local area. Places I expected to have it – high schools – weren't using the same form that CCC told me I needed. Access to the form at least would have been helpful. I've since learned about applying electronically, so that will help a great deal, but I didn't have that information. Then when all of that was finally complete, I had my forms weeks before the college did. So I waited. Since it meant the difference between attending or not attending, I was understandably eager to know. Surely there's a better way to share such information – securely – with the college. (S4)

Participants discussed a number of other services that they felt could be of benefit and were strong in their conviction they were necessary for EDE. Such services included the virtual campus tour, college orientation, and bookstore services. The virtual tour of the campus would allow the student, or prospective student, to choose at random those areas that he or she is most interested in; it might include access to resources available rather than just a tour of the buildings as the reality tour usually is.

At Level Two an example of the orientation to college might include an assessment regarding key concepts in college (academic terms and concepts) as well as services and resources available and would provide the student with immediate feedback about incorrect responses.

From the bookstore, participants indicated they needed access to purchasing books. They predicated a process similar to Amazon.com and VarsityBooks.com, which included ordering online and credit card payments. The expectation expressed
was that the cost would be less at the college bookstore than through the private companies.

*Individual Support Services*

In support of individual services, participants again expressed the need that students with disabilities be able to interact with the technology in ways that did not limit their ability to participate in distance learning. The focus was on the ability of all students to access and utilize the services and the technology and to gain access to all that was necessary for an effective distance learning experience. If the intent of distance learning is to provide access to those who might not otherwise gain a college education, then it must also be understood that interacting with the technology is just as critical as providing access. It would be less effective if students gained access to the course but were unable to utilize the information provided because no consideration was given to the use of text readers and the impact a visually graphic Web site might have on a text reader.

*One thing I noticed when surfing the Web was that text only was not always an option. This is necessary for the visually impaired student. Having worked with that technology — in a small way — I know they [text readers] are barely effective on a good day. Adding the additional complication of graphics and visually pleasing format just makes it that much harder for the student to get what they need.* (S9)

*The most obvious of course are the visually impaired. Using technology to read and interact with the computer is a great invention. If it worked as we think it should and not as it does.* (S7)

These are valid points to consider, even when a Web site passes Bobby, the computerized assessment program for Web sites. The difficulty is that the Web site may score as accessible on Bobby but the student still may be unable to access and interact with the homework assignment (Junco, 2001).
Co-researchers indicated that electronic advising is a key component in student services for EDE. At Level Two, co-researchers defined access to e-advising information as necessary for distance learners to self-advice and to formulate informed questions for advisors. This included access to such information as determining specific courses to fulfill degree requirements, transferability of coursework, credits, and course equivalencies. Participants suggested that the ability to access advising information would allow students to self-advice from a distance. At this level, co-researchers also hold the expectation that computer programming will allow students to choose the degree, key in the credits earned, and receive a degree audit of their transfer credits.

I've spent a lot of time — and money on long distance phone calls — to talk with an advisor about how this class would transfer and where it fit into the degree requirements. Since I wasn't asking for an exception of any kind, I wonder why that information couldn't be provided online without bothering an advisor. (S7)

I was surfing the Web when I found a site for California colleges that allowed me to type in a degree I was considering, and then it determined which of the courses I'd taken fit the degree and where they fit. It was really helpful. Assuming the information was accurate and current, there'd be no reason that I couldn't always know how close I was to completing the degree. (S4)

Another suggestion that emerged from the conversations was the need for access to job placement online. Three of the participants indicated that they expected to relocate at some point in the future and expected the college's career center to provide some assistance in locating a job in their fields of study. They were, however, less clear on the form the assistance should take.

Recently, I've started to think about how the college might help me get a job when I graduate. Now, I'm familiar with the labor market data and feel certain that I can find information about any city or town I might want to move to. But I wonder how the college could help me when I get ready to relocate. (S2)
One thing that occurs to me, maybe because I went to college before starting distance learning courses, is how will job placement occur for those of us off campus? I guess I imagine that I'll send a resume and they will work with me via distance to find a job in the career I'm getting a degree in. But will all the jobs they know about be in the college area? What about those of us 3,000 miles away? (S4)

In a field like rad tech it could be useful for the college to supply access to some job information about this major. It would be easier for me, living so close, to find that at the campus. Maybe links to specific job markets or certain employers would be helpful to others living farther away. (S7)

Two other participants took different approaches to job placement online.

I can't imagine job placement being available to distance learners — at least in the traditional sense. You know, where you send a resume and they set up an appointment with an employer and you go for an interview. I can't see that happening for me, living on the East Coast. But I do think they could use the Internet to set up links to labor market information and to departments of labor in each state, any specific information to the degree or major that could be useful. Maybe even a list of local employers and contact information. (S10)

I think links to various sites as well as employer information by major could be really helpful. But I can't see the personal touch being available for us at a distance. Which is too bad. I could use some assistance in getting a part-time, temporary position in the local area. I don't know how the college could manage that, though. (S5)

Community Support Services

Participants indicated two services that would benefit distance learners within the community support services category at Level Two. These include advanced library services and discipline-specific links. Advanced library services were defined as the ability to access to and delivery of interlibrary loan online and for the college to provide door-to-door delivery of books and resource materials.

I see using the college's Web site to order books from the library and having them delivered to the door — my door that is. When I'm done or the due date is up, I send them back. That way I've had the opportunity to use the materials I needed without buying them. Of course, the down side is still the time for shipping, as well as the
cost. It might still be better for me, or any distance learner, to find a resource locally. [It’s] likely to be more cost effective. (S2)

Since I live some distance away and have had to be creative about getting research materials, I think interlibrary loan online would be of real benefit to me and other distance learners as well. I often wished that I could just type in the info and notify the library that I needed a book or pamphlet or whatever, and they would send it to me. I’ve been able to use the resources found locally, but I’ve been concerned there are better resources available than I had access to. I guess I’m doing okay, since my grades continue to be good and the instructor hasn’t said, “You missed the point by not reading this author.” (S8)

These comments imply an attitude — I haven’t heard otherwise, so I must be doing okay — that was reflected by other participants in this study. This attitude of hesitation may be reflective of distance learners being unaware of what and how well the other learners are doing — being at a distance and wondering how they measure up. Or it may be reflective of the need for more feedback from the instructor in a timelier manner. Further study is necessary.

Another recommendation made by the co-researchers was for links to discipline-specific sites. Discipline-specific links were defined in two ways by the participants. One definition focused on job sites related to specific majors. The second focused on library links to specific discipline areas that would allow students and prospective students to explore coursework before enrolling and to have access to research materials after enrolling.

Yes, I can see applications for links to discipline-specific areas. I see job placement information. You’ve seen those books — jobs you can get with an English degree. There could be links to home pages of people with your degree and how they’re using it. There might be more general links to those specific majors and DOT info and labor market data. (S5)

One thing I needed that I had to search out was information for a history class. Since it [the timeline] covered since the Civil War, there was a lot of information to seek out and find. At the time, when I was spending hours — literally hours — to
find information about a variety of topics, I thought the library might have simplified the job for me by linking to such topic areas. Broad areas to give me some background information, then I could narrow the focus to that area I needed or planned to research for the paper. Don’t get me wrong, there were links the instructor built for the class that were interesting. What I’m thinking about would be broader, more global in focus. (S10)

Table 11 summarizes student services as determined by co-researchers for Level Two - Interaction. They are organized into the administrative, individual, and community support services for appropriateness and applicability.

TABLE 11

STUDENTS EXPECTATIONS OF LEVEL TWO STUDENT SUPPORT SERVICES FOR EDE

<table>
<thead>
<tr>
<th>Administrative Support</th>
<th>Individual Support</th>
<th>Community Support</th>
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<tbody>
<tr>
<td><strong>Level Two Interaction</strong></td>
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<td></td>
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<tr>
<td>Orientation</td>
<td>Accommodations</td>
<td>More advanced</td>
</tr>
<tr>
<td>Financial aid application - access to the form</td>
<td>E-advising</td>
<td>library services</td>
</tr>
<tr>
<td>Tour of the college</td>
<td>Credits - information about how the credits will be transferred, course equivalencies, ASSIST</td>
<td>Interlibrary loan online</td>
</tr>
<tr>
<td>Bookstore</td>
<td>Access to applying for jobs online</td>
<td>Door-to-door delivery</td>
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<tr>
<td>Online testing</td>
<td>Access to applying for jobs online</td>
<td>Advanced links to resources - discipline-specific</td>
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<tr>
<td>including self-assessment</td>
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Summary of Level Two – Interaction

At Level Two, co-researchers were most concerned about fully using technology to interact with support services. Such administrative support services included orientation, a virtual tour of the college, access to the bookstore online, as well as self-assessment. Individual support services include electronic advising, that is,
access to an advisor using the same technology as the coursework; course equivalencies; and transferability of credits. Community support services include more advanced library services such as interlibrary loan online and access to door-to-door delivery of materials.

**Level Three - Independence**

Level Three - Independence - focuses on the development of services to EDE students that allow “students to carry out activities on one’s own and to be self-sufficient” (Chickering & Reisser, 1993, p. 132). According to Chickering and Reisser (1993) this is one of two major components of instrumental independence (Chickering & Reisser, 1993). The other is the ability to leave one place and function well in another. Both components have application for the student enrolled in EDE coursework. Independence emerged as the theme for Level Three from the conversations with co-researchers.

Participants indicated the need to fully use the technology to gain sufficient access to the higher functions, to obtain more personalized services, and to transact business. This level is characterized by the ability to be more interactive, to fill out forms and submit them, and to pay bills.

Administrative services at this level remain somewhat general. These include access to the student handbook, particularly policies and procedures, as well as to program-specific brochures. Individual support services included personalized advising and personalized evaluation and access to online job placement and referral. Community support services included still more advanced library services, including access to an online reference librarian and full-text databases.
Table 12 summarizes students’ expectations of the needed support services for EDE at Level Three.

TABLE 12

STUDENTS' EXPECTATIONS OF LEVEL THREE SUPPORT SERVICES FOR EDE

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<th>Individual Support</th>
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<td><strong>Level Three</strong></td>
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<tr>
<td>Independence</td>
<td>Program brochures</td>
<td>Accommodations</td>
<td>More advanced</td>
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<td></td>
<td>Credit bank</td>
<td>Personalized</td>
<td>library services</td>
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<td></td>
<td>Student handbook</td>
<td>advising</td>
<td>Access to</td>
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<td></td>
<td>Graduate and</td>
<td>Personalized</td>
<td>reference</td>
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<td>retention data</td>
<td>evaluation</td>
<td>librarian online</td>
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<td>Full online application,</td>
<td>Access to</td>
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<td>information, and</td>
<td>resources:</td>
<td>database services</td>
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<td></td>
<td>troubleshooting for</td>
<td>tutoring, writing</td>
<td>Bulletin of events</td>
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<td></td>
<td>financial assistance</td>
<td>center, math</td>
<td>Specialized</td>
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<td>clinic</td>
<td>information:</td>
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<td>Online job</td>
<td>Health issues,</td>
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<td>application, and</td>
<td>alcohol info</td>
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<td>referral</td>
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</table>

Administrative Support Services

Participants indicated a number of services that might be provided at Level Three. These included additional program brochures; career specific data; a “credit bank” (Southern Regional Educational Board, 2001); college publications, including the student handbook with policies affecting students; graduate and retention data; and access to the financial application online. Five of the participants indicated program brochures, that is degree-specific information, would be most helpful to students pursuing a degree. The second choice was degree-specific career information. Participants seemed unaware that this information is reported in the Graduate Rate
Survey. Many suggested it would be helpful to have career statistics published online in one place such as the program brochure, making it easier for distance learners to access.

When I was first deciding on a major, I searched the Web for information about various degrees and majors and where the jobs might be and what they pay. I want to be sure I can get a job in my major for years to come. What I wanted, but didn’t find, was basically a Web page dedicated to business and what the field is going to be like in the short term. I wanted to know if people really graduated in this field and what kind of jobs they had. (S8)

I looked for an online program sheet. You know those brochures colleges publish that list degree requirements and number of graduates and where the grads are working now. I didn’t find one, though I did locate some information about career and job opportunities through the Department of Labor site. The department was able to give me some information about grads and where they’re working now. But it took time and money on my part. AND [student’s emphasis] I knew where to look — not everybody does. (S9)

I just wanted something to tell me about majors and what I could do with this degree. (S2)

Another pressing issue for three of the participants was one centralized location to track and accept the coursework and bank it until it was used to fulfill the degree requirement — a concept similar to the “credit bank” (Southern Regional Educational Board, 2001).

I have the opportunity to take distance courses from a number of colleges. I would like to do so but worry about where those credits will fit toward a degree. Surely, with today’s technology there is a place to ‘bank’ those credits so they’re not lost and have them recognized by all institutions of higher education. I intend to complete as quickly as possible, but I’m a father of four — anything could happen. I want to know those credits are usable. (S10)

It’s not important for me to pursue a degree. Not really. I’ve worked in my field for many, many years. The degree will make it possible for me to be a manager at the hospital. A good thing but not necessary. Mainly I’m doing this for me. But I’m finding because Rad Tech is such a specialized field that I don’t find everything I need in one place or from one college. I was wondering about all the credits and non-credit training I’ve had over the years. Is there one place to put those so I could print
a transcript when I need it? Or for the next college to go online and view my credentials? (S7)

Three participants indicated access to the full financial application and shared information would be of benefit to distance learners. Six of the ten indicated they received financial assistance; awards varied from federal financial aid (Pell grant and student loans) to employer assistance programs. Many were able to locate the necessary forms to apply for financial aid in their local communities. Those close enough to campus picked them up at the college. One issue surrounding financial assistance was the manner in which information is shared. Participants indicated they would receive acknowledgement of eligibility weeks before the college did. Concern was expressed at the delay and that it could have made a difference in their getting the courses they needed and in the amount they would receive. Participants suggested that access to a clearinghouse, a data warehouse of information, would be beneficial and allow the colleges and students to share the records in a timely manner.

*It was weeks after [I received the form telling me of eligibility] that the college was informed. It didn’t seem to make any difference; I was still able to get registered for my classes and I qualified but the delay seemed longer than it should. It seems that with today’s technology the feds could report the information to a data warehouse that could be accessed by the colleges. That would seem to be a workable solution. (S10)*

I didn’t have any problems with financial aid at this college. However, I was told at another college that distance education courses could not be counted as part of the full workload for financial aid. For me that meant the difference between 900 and 1,900 dollars. I still don’t understand why one college can pay for the courses and another doesn’t. (S5)

**Individual Support Services**

At Level Three, participants talked about customized services, such as advising, personalized counseling, and access to tutors and instructors in the writing
and math labs. One participant referred to this level as "a personally relevant online campus experience" (S9): those experiences tailored specifically to the student. A third component, briefly mentioned, focused on online job application and referral.

Personalized advising enhanced the e-advising component in Level Two. At Level Three participants had expectations that distance learners be assigned an advisor to provide personalized and individualized advising, specific to the student record. The expectation was also that this be provided online whenever possible or via telephone if the technology was unable to accommodate the service.

The more classes I take, the closer I get to graduating. I want to be able to log on and click on my advisor's name and know that within a few hours, I'll have an answer to my question. Now, realistically, I know schools can't hire advisors 24/7. But living on the East Coast, my 9 to 5 is not the same at CCC. I've always had good responses to e-mails; it seems to be the preferred method of communication these days. Maybe the college could have an advisor on call during the wee hours. (S10)

I am completing a four-year degree. The [four-year] college questioned one of the courses I took. I needed more complete course descriptions than the catalog could supply. I contacted a number of staff before I located a sympathetic advisor who supplied course outlines and offered to answer questions. If it had been during the course, the instructor could have handled it. However, it wasn't during the course. The Web page for the class no longer existed online, so I had to keep looking—or retake a similar course. NOT an acceptable option. (S9)

As a pretty savvy adult student, I consider myself to have the skills necessary to self-advising. And I do. But occasionally I run into something, usually a phrase that could be interpreted in more than one way. Which would have an impact on my degree requirements. At that point, I want to contact an expert, identify myself, and ask the question. Then I want to receive a definitive answer—usually in writing, so I have a record. Sounds like this would be a great service to provide to distance learners. (S3)

My major has an internship class that is required. I have worked in the field for 13 years. I wanted to use the experience I've gained in the field so as not to do another internship. On campus, that's a discussion I would've had with my advisor. From a distance it was much more of a chore than it needed to be. (S10)
Three participants suggested online job placement referral services need to be provided for EDE students. As discussed in the section Level Two – Interaction, job placement meant the ability to submit a resume and to apply for jobs online. At this level, participants expect to apply and submit their requests for placement services and to be referred to those jobs in their fields of study and in locations as specified. Participants expressed the idea that a portfolio, similar to the placement portfolio in more traditional career centers, would be available online to potential employers. The college would track and update information regularly to students participating in the career program, allowing job opportunities to be available at any time, not just graduation.

*It would be advantageous for EDE students to be able to create a placement portfolio, just like they do at four-year schools. The graduating student completes a resume, gets letters of reference from instructors, and the college maintains that for a number of years. If that were available online, coded by a password that allowed the student to update and change over time, as her/his jobs changed, this could provide a great deal of information to potential employers. The career center could code them in such a way as to make them available to employers with certain skill sets.*

**Community Support Services**

Level three of community support services is to enhance the services already provided, such as library services, to add a bulletin of events, and to provide more specialized information such as health and drug and alcohol information that might be of interest to the general population. Participants were most closely concerned with additional library services, such as access to a reference librarian and to full-text database services. Participants made it clear that as they progressed through the educational process their need for library services would continue to grow. Two
participants mentioned the possibility of graduate school, but three more talked about the increased need they were experiencing for enhanced library services.

*With the first class or two, the instructor gave me everything I needed: research topics, suggestions for resources, links to more information, and other materials. Now I'm finding that while the instructors provide a lot of information, it no longer includes all that I need for the number of papers I have to write, especially in the history class. So, I'm searching the Web, and local libraries and online bookstores and other libraries. There is so much information available, particularly on the Web, I wish for a librarian to call or write to help me sort through the better info. Since I'm also pursuing a four-year degree, the local community college library has tried to be helpful but doesn't have the same resources. (S9)*

*Somebody to talk to — that's what I need. When I've chosen the topic and can't find anything on it, that's when I want to sit down with a librarian and plead for help, to sort out what's available, what's good research and what's not. That isn't currently an option, so I've had to search out local librarians, other college library staff, but it's difficult to organize my schedule and theirs to get time to do what needs to be done. And that's assuming the locals have the data I need. (S2)*

*When I've started to gather all this information and I'm a bit overwhelmed by it, I want to be able to ask someone what's good research, how to tell it out of all the pages of stuff I've got. Normally, I'd start with the instructor in the classroom. But being some distance from the classroom ... I've met with a local librarian who graciously did a mini-class on research on the Web, much of which was brand new material to me. Great stuff, but the library didn't have much material on the subject — the Kennedy years. My personal library was better because I'm interested in that aspect of history. I needed access to a reference librarian and a well-stocked library. I'd even be willing to pay a fee — if it's not too large — to gain access to those two things. (S4)*

Another issue suggested by participants was a higher level of access to such services as the writing center, the math lab, and the tutoring center. As seen in level two, co-researchers indicated that using the technology to allow access to programs and services that could assist distance learners would be beneficial. In level three, they indicate access to a person is needed to assist with those hard-to-learn problems and to generally “have a conversation” (S5).
I am a visual learner, but there are just times I need to think out loud and have someone, usually a tutor or instructor, tell me where I went wrong. Frequently, having that conversation is enough to set me right.

Three and four participants, respectively, indicated an interest in having access to counselors and specialized information such as health issues and drug and alcohol information. One implied the information on a particular health issue was highly personal and would assist him with an ongoing issue in his life. One also implied that he needed an assessment to help him determine if alcohol consumption was a problem for him. He indicated he searched the college Web site but didn't find anything that would allow him to "take a quiz and get answers back to whether he might be drinking too much." (S2)

I feel certain there is something out there to help me with this but I haven't found it. I can read tons of stuff about the problem but haven't found anything that assesses my own drinking pattern. (S2)

The majority of the participants felt differently. They suggested that information is readily available on the Web, at local libraries, at counseling facilities on a variety of topics and that there was no need to clutter the college Web site — unless there was a reason to do so. One such reason was postulated by a participant.

Well, it seems to me that I can find information about many things just by doing a Web search. I don't feel this needs to be part of the college's Web or something they provide us with. I could see for instance during Drug and Alcohol Awareness Day there might be a link to the Bacchus site so I can reaffirm that an occasional glass of wine does not an alcoholic make. Otherwise, I'd just as soon find info anonymously. (S6)

Online access to local events was mentioned briefly by three students living in the state and within driving distance of the college delivering distance education. However, this service does not meet the needs of the more distant learners. When
queried by the researcher as to the need for access to this service, all implied, "it would be interesting" (S1, S3, S7, S10) but not something they'd be likely to use anytime soon.

At this level, co-researchers were most concerned about more fully using technology to provide additional information about program-specific data; advanced links to college publications, including the college handbook and any discipline-specific handbooks, customized advising; and access to full library services and reference librarians. A number of other options surfaced during conversations with participants but carried less weight than those mentioned above. These services included graduate and retention data, online job placement application and referral, bulletin of events, and specialized information such as health issues and drug and alcohol information.

Summary of Level Three – Independence

At level three the focus is independence from time- and place-bound services, to move beyond interaction using technology. This level is characterized by the desire for increased autonomy from face-to-face services and access to consultants as needed: "that is, a live body to ask questions of to get the answers I need." (S10)

Administrative services include program-specific brochures, the ability to access policies and procedures, to participate in a credit bank environment. Individual support services included customized services such as personalized electronic advising and degree audit functions, access to tutors, and online placement application and referral opportunities. Community support services included access to a reference librarian online, as well as access to full-database services. Participants indicated that a fee-for-service would be acceptable at this level, recognizing that needs will vary
greatly among students accessing various services. Community support services also
included access to specialized information such as health issues and drug and alcohol
concerns, as well as ways to access local information on each.

Summary: Research Questions

Participants of this study indicated that EDE is a viable alternative delivery
method of instruction and has provided an effective learning experience on several
levels, including personal growth, problem-solving, and critical thinking. Access to
distance learning is perceived as an essential component of all distance learning
programs. Co-researchers were firm in their observations regarding the need to
provide access for all – students who have special needs and access issues; those who
are unable to attend class in the traditional classroom for any number of reasons,
economic, psychological, and physical; and even those students attending the campus-
based coursework who would benefit from being able to register online or utilize the
library electronically.

This has been one of the most rewarding experiences of my life. I feel I have learned
so much more than I have in more traditional classes. I've also worked a lot harder
doing it, too. And never had so much fun. (S9)

This has been a significant benefit to me. It is allowing me to work full-time as an
EMT while working on my degree. It is so exciting to come home from work and go
online to check for new class information. At my convenience. This says a lot for the
future of online training and education (S10)

This is my 8th Internet-based course, and I can't say enough about how great it is.
Convenient. I do homework at lunch or at home in my jammies. I don't commute
back and forth or worry about getting there on time or finding a parking space. My
class is laid out when I start. And I know when each assignment is due, what
books I need, and when I need help I can e-mail the instructor and other students.
As a working mother my spare time is precious to me. For someone with an already
hectic life, I can't imagine an easier method of taking courses. (S7)
My husband operates his own business and has been interested in attending college for several years, but due to class schedules he has not been able to attend classes on campus. We researched several distance learning colleges and had no idea it would become a reality so close to home. Now, hopefully, he’ll be able to attain his degree through the virtual college. (S5)

Participants defined three levels of student support services as needed by distance learners. Each level was characterized by a theme of critical importance to the participants, a theme that sought to define the primary focus of each level. The levels were called access, interaction, and independence. The researcher further classified the data using the three categories framed by Namm and Holly (2000): administrative, individual, and community support.

Figure 2, as illustrated, is a visual representation of the model created by the participants of this qualitative study and further enhanced by the researcher following Namm and Holly’s (2000) framework. It is designed to provide a system that allows for access (through accommodations), interaction (engagement in the process), and independence (exploration and autonomy) to accomplish as much as students can for themselves. The representation is viewed by the researcher through the lenses of researcher and practitioner and illustrates the “progressive responsibility” (Levitz & Noel, 2000, p. 2) encouraged by the model.

Chapter Summary

The purpose of qualitative research is to generate theory. This qualitative study of student services and EDE generated six conclusions as a result of the research and the review of the literature.

- Student services are a critical component of EDE and must be addressed early in the development of any quality distance learning program.
- Services provided to EDE must be equal and of the same quality as those traditionally delivered.
- Participants indicated that support services must provide accommodations for those with special needs – access for all or it isn’t access at all.
- Participants perceive a number of support services as essential to the EDE experience.
- Participants expect services to be delivered in a format similar to the delivery method of the coursework but are accepting of other formats that provide access via distance.
- The model developed by the participants and refined by the researcher provides the lens through which student services practitioners view the need for services for distance learners.

This research developed a working model of student services to be developed and delivered in three levels for EDE. Three levels define the model – access, interaction, and independence – and three categories – administrative, individual, and community support services – further refine the model of student services to be provided to distance learners. A visual representation can be found below.

While these findings are informative, the small sample size of participants at one Oregon community college limits the generalizability of the data. Therefore, the judgement of transferability of the study’s findings must rest with the reader.

Both the model and the conclusions drawn have implications for future practice in student services and distance education and invite further research using other methodologies. Specific recommendations are detailed in the following chapter.
CHAPTER V

RECOMMENDATIONS FOR RESEARCH AND PRACTICE

Electronic distance education is forcing institutions to redefine how they think about themselves and how they provide a quality learning experience to students. EDE can provide "access to education resources without constraints in terms of time or space" (Birchard, 2001b). With employers encouraging lifelong learning and more jobs requiring Bachelor's degrees for employment, many opportunities will exist for students and prospective students. Moreover, the rapid development of online learning has caught the attention of small business owners (Phillips, 1998). EDE is expected to become more credible and attractive and to be used for many kinds of learning in the future. The Web-based education market is predicted to be the biggest sector of technology-based education by 2002 (International Data Corporation, 1999).

While EDE can provide meaningful learning opportunities to students for training and education, care must be taken to provide necessary student support services as well. "It's easy to put courses online. What's hard is supporting them" (Heeger, 2000). In a general sense, a Web-based learning environment should interact with the students, adapt to the needs of individual students, support interaction between student-teacher and student-student, and be user-friendly (Hong Hong, Xiaoquin He, and Jesshope, 2001).

Implications of the Research

These findings have implications for student services professionals, for the students, and for the role and function of technology in the delivery of student
support services to distance learners. Student services professionals strive to provide services to a changing and diverse student population. While administrators prepare for growing numbers of students with diverse needs, depressed funding projections suggest that traditional methods and practices will no longer meet anticipated needs.

Distance education is an area of increasing interest and importance as colleges struggle to meet the growing needs of diverse students, provide access, and maximize limited resources. As Miller (2001) emphasized, some institutions are counting on EDE to supplement revenue sources, while others understand the value of EDE as a way to engage the college with a broader constituency. Student services professionals are trained to build bridges between constituencies: students, faculty, and administrators. For student learners, the historical approach to service delivery, described by Moneta (2001) as a departmental approach, is no longer adequate for today’s students. Student learners see themselves as consumers who have choices regarding their transactions, who expect “one-stop shopping,” multiple transactions through a single interaction, paperless communications, and minimal running from office to office (Moneta, 2001, p. 2).

Changes based upon these findings will impact students as well. Technology will allow new and different kinds of services to be delivered electronically, saving distance learners time and effort in finding or developing their own resources, waiting for data to be re-entered before the next step becomes available; i.e., registered immediately after submitting the application.

Acknowledging the changing needs of student learners does not “denigrate our long-standing commitment to student development” (Moneta, 2001, p. 2). Students no
longer need to live in close proximity to a college or university to complete college-level coursework. Student services professionals must be prepared to offer equitable services via distance to learners – not just those students using EDE but also to the on-campus students seeking the convenience of online services. It is important to note that equitable service does not necessarily mean identical. Services must be available from the beginning. College administrators must seek to develop critical systems first and to build the infrastructure for services to students before the academic components.

A key component of success of any program is to develop a model of student services designed with student success at its core. Administrators and student services practitioners must understand that the best model for student support services in EDE is a systemic approach. Baker (1997), citing Thach and Murphy (1994) indicated that whether it is a centralized physical structure of brick and mortar or the virtual university of the future, a systems perspective is necessary when designing any distance education structure.

The challenge is for us to see beyond the innumerable fragments to the whole, stepping back far enough to appreciate how things move and change as a coherent entity. (Wheatley, 1994, p. 41).

Numerous factors help to create a meaningful EDE learning environment, and many of the factors are systematically interrelated and interdependent. A systemic perspective now exists to examine these factors and to assist designers as they attempt to create meaningful distributed learning environments (Khan, 2000). The framework now exists for student services personnel to examine electronic support and resources required to foster meaningful EDE environments.
Researcher vs. Practitioner: The Dilemma

This study highlighted an ongoing conflict for student services professionals – the research/practitioner dilemma. Daily, student services professionals are confronted with making decisions that have impact on students. In many instances these decisions are made without benefit of input from the students or within the context of a theoretical foundation. In those rare circumstances when students are queried about their wants and needs, a great dilemma is created for the student services professional. Does the student services professional follow the advice of the student body? Or is that information filtered through the lens of the college?

If student services professionals do refine or clarify the information received from students, at what point do they utilize their professional filters? To what extent does the filtering process override honoring the voices of the students? How does the practitioner and the researcher balance those disparate needs? How do we provide what students believe they need within the guidelines, standards, and structure of the college? How do we as researchers honor the voices of students while as practitioners we are called upon to do more with less? How do we provide services to students while keeping the interest and fiscal well being of the college in mind?

A recent example of one such dilemma is provided by Don Smithmier, director of Web strategies and operations at Capella University: “What I’ve seen is that the great ideas are coming from the learners themselves. The learners don’t hold back. We are in a great position to gather feedback and then prioritize and get it done” (Online Student Services Comes of Age, 2001). It's obvious that Capella is listening to the students and making changes as a result. However, prioritizing services is an
example of using a professional filter, of honoring the voices of the students but within the framework of the institution. Sir John Daniel (2001a), past vice-chancellor of the British Open University, suggests “... the most important lesson is that we need to work in partnership with the students; sometimes we should follow their lead. And sometimes we should lead them.”

Knowing when to follow and when to lead is part of the dilemma faced by student services professionals on a regular and ongoing basis. How this issue is dealt with depends on a number of factors, including institutional mission, professional philosophy, tenets of ethical behavior, as well as such practical matters as available resources, needs analysis, and prioritization.

This dilemma provides student services professionals with an opportunity to strengthen practice with theory. The lack of theoretical foundation has been an ongoing criticism of the profession. While student services for EDE vary by college and student population, this model will assist practitioners and decision-makers in providing student services to distance learners. The conclusions of this study have implications for higher education practices and invite additional research using systematic and carefully designed studies.

While student services for EDE vary by college and student population, the proposed model will assist practitioners and decision-makers in providing student services to distance learners. The conclusions of this study have implications for higher education practices and invite additional research using carefully designed studies.
Recommendations for Future Practice

There is little doubt that technology will continue to break down many traditional boundaries that have confined higher education to campus and location-bound delivery systems. Advances in communication technologies make educational programs and services more available than ever (Educational Technology Cooperative, 1997). With advocacy for student services being provided by a number of professional organizations, it will become more commonplace that student services professionals will be called upon for their expertise during the development of the infrastructure rather than during the implementation stage. Such organizations as WCET, WICHE, SREB, and ITC have indicated the need for student services professionals to be involved in the development of electronic services for EDE, even as the courses are being developed. Administrators and student services professionals should address electronic support services from a systemic approach. Student services professionals need long-term sustaining efforts that can grow and become a substantial part of the framework of EDE.

Based on the findings of this study, the following recommendations are offered to community college administrators and distance education practitioners.

Administrative Support Services

- Learn to recognize processes and procedures that may become institutional barriers for EDE students, such as limited support services, including on-campus services, unfriendly information, and fixed or limited hours of operation (Evans, 1995; Garland, 1993).
• Education professionals should recognize that long-term, sustaining efforts that can grow as part of the delivery of educational outcomes are necessary for the successful development of adequate infrastructure.

• The Web has become an integral part of the college experience. The college needs to provide a place that connects students with distance education services and courses (Haney, McClellan, & Kelly, 2001).

• Orientation for EDE needs to include not only information about the college policies and procedures, students rights' and responsibilities, and services available to students but also technical requirements and standards necessary to be successful.

• Practitioners need to identify students more reliably to provide online services — not only for the security of such administrative services as registration and grading but for enhanced services such as personal counseling.

• Students need one-on-one interaction to feel engaged (Haney, McClellan, & Kelly, 2001). Advising is a critical component of EDE services, and more effective advising is the key to improving students' overall academic experience.

**Individual Support Services**

• Student services professionals must recognize that students traditionally excluded from post-secondary education are the most dependent on face-to-face interaction and the least able to deal with the frustration and isolation of distance education (Carnevale, 2001d).
Higher rates of attrition than those in the traditional coursework may indicate that online coursework does not supply the personal interaction that students require, or it could mean that distance education students are often older and busier than traditional college students.

Helping students make connections lowers the attrition rates. Staff need to consider opportunities to increase the interaction with EDE students to help increase retention.

Community Support Services

Institutional policies have not kept pace with the growing popularity of online learning and the ambiguities it's created (Conflict, 2000).

Gunn (2000, p. 2) indicated "there are no office hours on the Internet." Students send e-mail requests and access services 24 hours a day. Student services personnel must have a plan for coping with the sudden influx of e-mails received.

Personnel must provide adequate and trained support staff and resources for EDE operations. This should include the technical aspects as well as the more routine components of the job.

Training should also include accessibility issues and working with special populations. Accessibility is not a separate issue and should be incorporated into the initial and ongoing phases of creating, designing, updating, and maintaining Web sites, courses and services (Watson, 1998).
• Since the EDE audience is potentially spread across the world, recruiting efforts may need to be confined to a niche offering specialty courses or targeting specific students or programs.

• Recognizing that the world wants American education but not necessarily American values, the challenge will be to build an online, global education that has integrity and that preserves education's liberating role (Heeger, 2000). Because of the globalization of education, student services professionals should have the site reviewed by an international consultant for cultural differences. Colors, symbols, and expressions may have double meanings in other cultures or be inappropriate in certain circumstances.

Based on the findings of this study and the review of the literature, the virtual campus has many of the same challenges as the traditional campus: providing quality, academically rigorous coursework; coordinating administrative, community, and individual support services; creating a sense of community, and providing worldwide access to accurate and comprehensive information. This can be done effectively only by developing, within the framework, basic services needed by students and by phasing in more advanced and comprehensive services.

“Education [and services] are not something that you deliver like clean diapers or mail order clothes. Students are living, breathing human beings and need to be part of a learning community. The challenge is to continue to work toward creating student-centered, technology mediated learning communities in which the technology tools are so seamlessly integrated as to be transparent” (Daniel, 1998).
Recommendations for Further Research

This study described and communicated a student-constructed model of student services for EDE. Findings from this investigation offer abundant opportunities for further research. While these findings are informative, they are limited to the context of the participants and the Oregon community college selected for this study. Additional research with other populations is needed to determine if the findings are generalizable.

If student services professionals are to understand how to enhance the distance learner's experience with regard to access, interaction, and independence using electronically delivered student services, research should be done in the following areas:

- Technological needs of students with disabilities
- Participants who did not use or feel that students services were necessary for their EDE experience
- Storytelling around the use of technology
- Technology as a student services function

One of the findings of this study focuses on empathy for special learners: those with physical, learning, or psychological disabilities that need to be addressed via distance. Many of the participants had a story about someone they knew or had class with who required accommodations for a disability. There was a high level of engagement within the class membership and the participants indicated that access was a universal issue and needed to be provided for all—or it wasn’t access at all. Does the distant learning experience result in a greater openness of sharing and
sensitivity to those with special needs? This finding also generates a question about community and interaction that develops among class membership. The teaching faculty member of the panel indicated that interdependence of students is more acute in EDE courses than many of the traditional classrooms because students cannot depend on others to cover their lack of preparedness (McClellan, personal communication, 2001).

As participants were introduced to the topic of this study, they began to enumerate the services each felt should be provided for distance learners. Because of the affirming responses from participants indicating that services were necessary, there was no opportunity to pursue questions with students who did not feel a need for support services. Research with these individuals whose perspectives are not represented in this study would provide a more comprehensive view of services necessary for EDE.

Students are also engaging in storytelling around the use of technology, advocating for students with special needs as well as those campus-bound students who could also use the services developed for distance learners. The perceptions of these participants was that the technology was a service not a function of instruction or pedagogy. This finding is substantiated by the recommendation of the Western Cooperative for Educational Telecommunications Guide to Developing Online Student Services. The guide recommends providing information to prospective students on assessing hardware and software capabilities. Gunn (2000, p. 2) indicated “there are no office hours on the Internet.” Students send e-mail requests and access services 24 hours a day. Student services personnel must have a plan for coping with the sudden
influx of e-mails received. Many students find it an efficient way to communicate and will share deeply personal information with the expectation of receiving personalized assistance. Personnel must provide adequate and trained support staff and resources for EDE operations. This should include the technical aspects as well as the more routine components of the job. Training should also include accessibility issues and working with special populations. Accessibility is not a separate issue and should be incorporated into the initial and ongoing phases of creating, designing, updating, and maintaining Web sites, courses and services (Watson, 1998). These leads to the larger question: should the technology function of electronic distance education be a student service?

The results of this study are important in that they contribute to the understanding of the distance learner, the need for student services delivered via distance, and the development of a model of student services for EDE. With the increase in the numbers of students participating in distance learning as well as the increased need of today’s society for continued training and lifelong learning opportunities, there is clearly a need for this type of research. It will lead to contributions that promote better understanding and more effective strategies and methods of providing support services to students, both on- and off-campus.
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APPENDICES
APPENDIX A
DEMOGRAPHIC SURVEY

I. Learner Characteristics

Age: Choose One

- 18-25 years
- 26-30 years
- 31-40 years
- 41-50 years
- 51-60 years
- 61+ years

Gender: Choose One

- Male
- Female

II. Previous Computer Experience

Circle the level that best describes you:

<table>
<thead>
<tr>
<th>Beginning Level</th>
<th>Some word processing</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No previous online courses</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Intermediate Level</th>
<th>Word processing</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Some e-mail use (Eudora, Netscape)</td>
</tr>
<tr>
<td></td>
<td>No previous online courses</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Advanced Level</th>
<th>Word processing</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>e-mail and upload/download files</td>
</tr>
<tr>
<td></td>
<td>previous courses</td>
</tr>
</tbody>
</table>

- I have used a computer to do the following:

- word processing
- CD ROM’s
- e-mail programs (Eudora, Netscape)
- conferencing systems (First Class, Blackboard)
- interactive video conferencing
- world wide web
- statistical programs (SPSS)
- spreadsheet programs (Excel)
- graphics programs (ADOBE Illustrator)
- authoring systems (Macro Media)
- programming languages (C++ or Pascal)
III. Course Specific Items

• Why did you take this course online?
  ____ It is required for my degree program.
  ____ I needed the credits.
  ____ The course looked interesting.
  ____ It fit my schedule.
  ____ It was the only course that had space available.
  ____ Other (please specify) ____________________________

• Why did you decide to take the course online?
  ____ This was the only way the course was offered.
  ____ I wanted to try it out for a new experience.
  ____ I expected online learning to be fun.
  ____ I enjoyed the previous online class.
  ____ I could take this course away from the college campus.
  ____ I could participate in the course at a convenient time for me.
  ____ I like to try out new technologies.

• I attended class from:
  ____ Home
  ____ My office or work place
  ____ At a school
  ____ Public library
  ____ Other (please specify) ____________________________

• If you did not access the course from home, why not?
  ____ Do not own a computer
  ____ No access to internet
  ____ Not enough dial up time
  ____ Computer not powerful enough
  ____ Too expensive
  ____ Other (please specify) ____________________________

• How many hours a week (average) did you spend on this class?
  ____ 1
  ____ 2
  ____ 3-5
  ____ 6-9
  ____ 10 or more
IV. Overall responses

• If I were to re-take this course, I would prefer to take it by
  ___ Face to face
  ___ Mixed mode (combination of online and face to face)
  ___ Completely online
  ___ Wouldn't take it online again.
  ___ Other (please specify)

• Please check all that apply:
  ___ It was easy to get around in this course.
  ___ It was easy to keep track of what conference I was in.
  ___ It was easy to track the threads of the discussion.
  ___ The online activities helped me generate new ideas.
  ___ The online activities deepened my understanding of the subject matter.
  ___ The relationships among participants in my group were good.
  ___ The instructor actively participated online.
  ___ The role the instructor played in the online activities was appropriate.
  ___ The student-instructor interaction in this course was good.
  ___ During online activities I felt free to express my ideas.
  ___ During online activities I felt free to address critically the ideas of other participants.
  ___ During online activities my ideas gained sufficient recognition from other participants.
  ___ During online activities I usually found the ideas voiced by other participants' interesting and informative.
  ___ The overall quality of my online experience was positive.

V. Other Comments:
CONSENT FORM

I agree to participate in the research study titled Student-Constructed Model of Student Services for Electronic Distance Education, which is being conducted by Joanna F. Blount, Oregon State University, 541-888-7339. I understand that this participation is strictly voluntary. I can withdraw my consent at any time without penalty and have the results of the participation that can be identified as mine, removed from the research records.

The following has been explained to me:
1) The reason for the research is to determine what the experiences with electronic distance education (EDE) has been and her/his perceptions of the student services available and necessary to her/his success. The benefits I may expect are: a better understanding of my own reasons for taking EDE coursework, a deeper understanding of my own success in EDE courses, and a recognition for the services and resources that have helped me successfully complete EDE courses.
2) The process will be as follow:
   a) I will be asked to participate in a conversation with the researcher regarding this topic. The interaction will be tape-recorded but my name will not be used. The interview will take approximately 90 minutes. The researcher will transcribe the tapes soon after the interview. The tapes will remain locked in a drawer until they are erased. They will be erased upon successful completion of the dissertation or five years, whichever is sooner.
   b) I understand that my progress through distance education courses will be tracked and that my grades will be accessed through my student records.
3) No discomfort, stress, or risk is foreseen.
4) The results of this participation will be confidential and will not be released with an individually identifiable form without my prior written consent, unless otherwise required by law.
5) The researcher will answer any further questions about the research, now or during the course of the project and can be reached by phone at 541-888-7339.

Signature of participant  Date

Please sign this form. Make a copy for yourself and return the signed one to the researcher.

Research at Oregon State University, which involves human subjects, is overseen by the Institutional Review Board. Questions or problems regarding your rights as a participant should be addressed to the Institutional Review Board, Research Office, Oregon State University, 312 Kerr Administration, Corvallis, OR. The telephone number is 541-737-3437.
# INTERVIEW GUIDE

<table>
<thead>
<tr>
<th>AREAS</th>
<th>PROBES</th>
<th>NOTES</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Introduction</strong></td>
<td>Read informed consent statement.*</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Answer participant's questions.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Define EDE.</td>
<td></td>
</tr>
<tr>
<td><strong>Reasons for</strong></td>
<td>What was your main reason for taking this course online?</td>
<td></td>
</tr>
<tr>
<td><strong>taking EDE</strong></td>
<td>Time? Place? Conflict with other classes or work?</td>
<td></td>
</tr>
<tr>
<td><strong>Student</strong></td>
<td>Describe your level of computer skills before taking this course.</td>
<td></td>
</tr>
<tr>
<td><strong>Demographics</strong></td>
<td>How would you describe it now?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Where do you work online?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>If you do not have access to a computer at home, where did you access the equipment?</td>
<td></td>
</tr>
<tr>
<td><strong>Student</strong></td>
<td>Define student services.</td>
<td></td>
</tr>
<tr>
<td><strong>Services</strong></td>
<td>What are your views on EDE?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Is your view different now than before taking EDE?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Would you recommend this method to others?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Why? Why not?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Will you take another class online?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Were you successful in this course? Why? Why not?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>How did you get your text?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>What library resources did you use?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Which student services did you take advantage of while taking this course? Library? Bookstore? Advising? Counseling? Were all these services available online? How effective were they? How often did you use the online student services? Were there other services you'd like to have access to that weren't available? In your opinion, what are the different student services needed for EDE? Why?</td>
<td></td>
</tr>
<tr>
<td><strong>Distance</strong></td>
<td>What has the experience been like?</td>
<td></td>
</tr>
<tr>
<td><strong>Education</strong></td>
<td>How does this method of delivery compare to the</td>
<td></td>
</tr>
</tbody>
</table>
| Pedagogy | How did the quality of instruction compare to your experience in the traditional classroom?  
Was there more or less homework?  
How often did you interact with your classmates?  
Your instructor?  
How did this interaction compare to your experience in the traditional classroom? |
|---|---|
| Closure | Is there anything you'd like to add?  
Is there anything I didn’t bring out that you’d like to comment on?  
What words of wisdom do you have for other students considering a class via EDE?  
Answer participant’s questions.  
Outline next steps. |

- Your participation in this study of distance education is voluntary and you may refuse to answer any question. Follow-up questions may be asked in a brief second interview or by telephone if necessary to the study. All of your responses will be tape recorded, transcribed, analyzed and synthesized with responses from interviews with other participants in the study. Individual identities and responses will be held in strictest confidence. Should you decide at any time during this interview to remove yourself from the study, your interview tape will be erased in your presence (Baker, 1997).