A DELPHI STUDY OF THE FUTURE SERVICES OF LEARNING CENTERS IN THE UNITED STATES

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CHAPTER I

INTRODUCTION

Programs designed to provide academic assistance to students are not new to institutions of higher learning. Maxwell (1980) cited a speech made by Henry P. Tappan in 1852 during his inauguration as president of the University of Michigan, in which he stated that American colleges were too much involved in teaching rudimentary courses that belonged in the intermediate or even primary schools, and that universities were lowering their standards by admitting poorly prepared students. Despite Tappan's reservations, higher education has historically provided help for those students who were less than adequately prepared for college.

During the 1960's, in an effort to provide equal opportunity access, colleges began to welcome even larger numbers of nontraditional students. To keep their open doors from becoming "revolving doors," colleges instituted services to provide assistance to students who were struggling within the academic system. These programs focused primarily on study skills and reading and writing improvement courses, usually administered by Education and English departments (Dempsy, 1985). The concept of a comprehensive learning assistance center, which would provide for the needs of all levels of learners, first appeared in the literature in 1970 (Christ, 1971; Ellison, 1970).

During the 1970's, comprehensive learning assistance centers began to take shape and flourish, responding to a need for a wider variety of learning assistance. The concept of a learning assistance center was articulated by Christ (1971) as:

> A place concerned with the learning environment within and without, functioning primarily to enable students to learn more in less time with greater ease and confidence; offering tutorial help, study aids in the content areas, and referrals to other helping agencies; and serving as a testing ground for innovative machines, materials and programs (p. 35).

The term "learning assistance center" was embraced by a large number of existing programs and inspired a change in mission as well as an expansion of services. No longer were centers serving only remedial students. New programs were also designed based on the expanded role of providing learning assistance to all learners. According to Boylan (1982), "In the decade between 1970 and 1980, a paper definition [Christ's] became a reality on college and university campuses across the nation" (p. 7).

In the ensuing decades, growth of these centers has been tracked, (Sullivan, 1979; Rouche and Snow, 1977; Devirian, Enright and Smith 1975), and much has been written about their role and function in academe (Haynes, 1989; Dempsey, 1985; Baker and Painter, 1983; Enright and Kirstiens 1980; Maxwell, 1980; Enright, 1975). Boylan (1982) however, speculated that the "golden age of learning assistance," between 1970 and 1980, which was primarily supported by the influx of nontraditional students into academe and the availability of federal funding for the support of learning assistance centers, was already beginning to lose momentum even as

early as 1982. Although nontraditional students are still attending college in record numbers, support from the federal government has been steadily declining (Dey, Astin, and Korn, 1991).

This reduced federal support has forced colleges and universities to look within for ways to reduce costs. One method seems to be through raising admission standards and reducing support for students who are less able to succeed in college without additional help (Mahew, Ford, and Hubbard, 1990).

While academic institutions are attempting to raise academic standards, the numbers of traditional students are declining and larger numbers of "high risk" students make up the pool from which colleges will draw their students (Jones and Watson, 1990; Tomlinson, 1989; Boylan, 1985; Hodgkinson, 1983). Longitudinal studies of the American higher education system have also identified trends that suggest the academic preparation of the traditional college student continues to decline. According to the Cooperative Institutional Research Program surveys, conducted over a twenty-five year span from 1966 to 1990, ". . . a number of continuing trends in the annual CIRP surveys of entering freshmen seem to suggest that the academic preparation of students entering college has, in fact, declined" (Dey, Astin and Korn, 1991, p. 1).

Statement of the Problem

The problem for this study is, with the current changing nature of education, including reduced funding, higher admission standards, changing demographics, and the push toward accountability, how will

learning assistance centers continue to change and evolve to meet the needs of students and their institutions. These indications of impending change, within education, prompted this investigation of the future services of learning centers.

Purpose of the Study

The purpose of this study was to obtain a consensus among recognized experts in the learning assistance field as to what services should be offered by college learning assistance centers in the year 2002.

The major questions addressed provided information on the following research concerns:

1. What services should be offered by learning assistance centers in the year 2002?

2. What should be the relative importance of each of these services?

Significance of the Study

Review of the literature indicates that, since their inception, learning assistance centers have attempted to grow and develop to meet the needs of the educational institutions that fund them, and to respond to the needs of the students who use their services. As changing demographics and reduced funding influence the focus of higher education, it is important for learning assistance centers to follow the advice of futurist Warren Ziegler: that the proper stance toward the future should be one of invention. Educators, who are in

the position to decide the fate of learning assistance centers, should determine what the future should be and begin to develop plans that will attain the intended future. Additionally, Toeffler (1974), made a good case for examining the future by his statement that:

> No educational institution today can set sensible goals or do an effective job until its members . . . subject their own assumptions about tomorrow to critical analysis. For their shared or collective image of the future dominates the decisions made in the institution (p. 5).

This examination of the future can provide direction and vision for learning assistance centers and for the people who benefit from their services.

The information from this study, which focuses on the types of services that learning assistance centers should be offering in the next century, will enable directors of learning assistance programs, as well as campus administrators to review services and reorganize resources to the best advantage for their learning community.

Definitions of Terms

The following terms were used in the study:

Consensus: Majority of opinion; general agreement and concord (Random House, 1991).

Delphi Technique: method for the systematic solicitation and collation of judgments on a particular topic through a set of carefully designed sequential questionnaires interspersed with summarized information and feedback of opinions derived from earlier responses (Delbecq, Van de Ven, and Gustafson, 1975).

Developmental Programs: Academic programs designed to improve students' basic academic skills to prepare for more advanced work (Boylan, 1986).

Experts: The participants of the Delphi Study selected because of their recognized expertise in the field of learning assistance. the participants will also will be called panelists.

High Risk Student: Student with higher than average chance of low performance and attrition (Jones and Watson, 1990).

Learning Assistance Center: An organized, multifaceted program providing comprehensive academic enhancement activities of the traditional classroom setting, and a centralized area wherein tutorial, learning, and study skill assistance is provided (Boylan, 1989).

Probe: One complete cycle from researcher to respondent and back to researcher.

Respondents: The experts who participated in the study.

Limitations of the Study

1. The results and conclusions were based upon the opinions and judgements of the experts identified for this study and may not be representative of all in the nation.

2. The Delphi technique focuses on and relies heavily on the expertise and opinion of the identified experts and their willingness to participate in all phases of the study.

Assumptions of the Study

1. The individuals nominated by their peers as "experts" are learning assistance professionals who gave responses that were more knowledgeable than those of a random sample of learning assistance professionals.

2. Results and conclusions were based on the assumption that the Delphi technique will provide an accurate forecast of the future.

3. The instruments used in this study were adequate for allowing the experts to report their opinions and beliefs.

CHAPTER II

REVIEW OF THE LITERATURE

This chapter will be divided into four parts. The first, the history of learning assistance, traces learning assistance in higher education from the inception of the colonial colleges to the introduction of the concept of the comprehensive learning assistance in the late 1960's. The evolution of the modern comprehensive learning center, follows the evolution from programs for reading and study skills programs administered by departments of Education, through the introduction and influence of technology from libraries. The third part, the organization and administration of learning centers, outlines identified goals and key components of successful learning assistance programs. The Delphi method describes the development of the Delphi study and how it has been used in educational futures research.

History of Learning Assistance

Although some advocates of tougher admission standards for institutions of higher education believe inadequately prepared students are new to higher education, these students have, in fact been a part of education since the early 1800's (Roberts, 1986). Since the colonial colleges were first established to serve the needs of wealthy aristocratic families, ability did not necessarily decide

who attended college. Those who matriculated did so because they could afford it, and because it was necessary to maintaining their station in life. Not all of these students had academic abilities or interests, and colleges were obliged to provide preparatory courses if they were to be successful (Cross, 1971).

Not everyone was satisfied with this role for higher education however, and in 1828, the Yale Report called for an end to the admission of students with "defective preparation." The report also criticized the methods of instruction as "more appropriate for secondary and preparatory schools". However, the report was widely ignored, and American colleges continued to open their doors to students who did not possess the prerequisite skills for success at the collegiate level (Roberts, 1986).

The question of how much precollegiate level work should be offered by colleges and universities was addressed by Charles Eliot in his inaugural address as president of Harvard in 1869. He felt that colleges were obliged to supplement the American school, and that colleges should supply whatever elementary instruction the schools failed to give (Brier, 1984). Five years later, in 1884, at the request of faculty members who felt that students' preparation in formal writing was inadequate, Harvard offered its first freshman English courses (Maxwell, 1980). By 1889, 80 percent of all post secondary institutions had instituted some type of college preparatory program (Boylan, 1988).

With the passage of the Morrill Acts in 1862 and 1890, increased federal aid was made available to land-grant and state colleges to

implement programs in applied sciences and mechanical arts. For the first time, higher education for "all of the children of all of the people," was mandated by the Congress of the United States. A new dimension of education, far removed from the colonial colleges, was opening up to an even more heterogeneous student population (Kerr, 1964).

Colleges were soon established to provide education to students who had been denied access to higher education. Vassar, created to provide for the education of women, admitted students with a great diversity of academic deficiencies. The diversities proved to be such, that in 1872 the Preparatory Studies Program, which included forty-five percent of the school's total enrollment, was created (Brier, 1984).

The Morrill Act also prohibited federal payments to any state which did not provide access for Negroes to their tax supported institutions, or provide "separate but equal" institutions. Consequently, every state which had a significant Negro population chose to provide separate institutions, and the number of Black colleges grew dramatically (Jones and Richards-Smith, 1987).

In 1890, the College Entrance Examination Board was founded in an attempt to standardized admissions requirements (Brubacher, 1976). However, as late as 1907, over half of the students who matriculated at Harvard, Yale, Princeton, and Columbia could not meet entrance requirements. In a survey conducted by the U. S. commissioner of education in 1915, 350 colleges reported that they had college preparatory departments. Competition for students to fill the

college and university classrooms was still fierce, despite the fact that students were not being adequately prepared at the secondary level. Most education money was still being spent on elementary schools with little emphasis on the secondary school (Maxwell, 1980).

The appearance of junior colleges in the early 1900's, provided the disadvantaged high school graduate with another chance to break the poverty cycle, and the minority student an opportunity to expand his skills and realize wider career choices (Roberts, 1986). These colleges succeeded in opening the door to an even more diverse student population. By 1915, 70 junior colleges were providing the equivalent of the first two years of college courses as well as a large selection of preparatory and remedial courses. Only five years later, the number had increased to over two hundred. This "movement" provided the first opportunity for colleges and universities to reduce their commitment to preparatory programs (Boylan, 1988).

Although the desire to restrict the underprepared student from colleges and universities was strong, and junior and community colleges were serving a large proportion of these students, many colleges found that they could not eliminate preparatory programs. In 1932, the University of Minnesota established a "college division" to provide services to students. This was necessary due to a mandate by the state legislature that they provide admission to all graduates of Minnesota high schools (Maxwell, 1980).

In the 1930's, as reading programs were emphasized in the public schools, remedial reading clinics were established at Harvard, New York University and the University of Minnesota. Maxwell (1980)

speculated that this interest in remedial reading was spurred by the introduction of general survey courses and the increased popularity of standardized testing. Remedial reading courses were added to the standard how-to-study courses which, up until this time, had been the predominate answer to underprepared and unsuccessful college students.

Several events, beginning with the need to shorten the amount of time it took to complete a college degree during World War II, influenced academic assistance in the 1940's and 1950's. After the war, the G.I. Bill encouraged millions of former servicemen to attend college, with the government providing funding for guidance centers, reading and study skills programs and for tutoring programs. The launching of Sputnik in 1957, turned attention to improving math and science education. The government funded programs that identified and trained the intellectually gifted, to the detriment of those less well prepared college students (Maxwell, 1980). It was during this time, that colleges began to differentiate between the so called "low-ability" students, and those students who were merely "underachievers" (Cross, 1976). Those who were perceived to be able to achieve were provided counseling and motivation activities that improved their chances of success. Even in expanded programs, the low-ability student was rarely provided for, and as a rule did not survive more than a couple of semesters.

It was soon after the Sputnik launching and the emphasis on math and science, that the children of the "baby boom" became college age. The large numbers of potential students enabled colleges to be highly

selective in whom they admitted. Colleges could also easily find replacements for the students who were lost through attrition. Admissions standards during this time were as selective as they had ever been (Boylan, 1988). It was a time of considerable growth for junior and community colleges as the concern for the underprepared student shifted to their campuses.

The community colleges, with their "open-door" policy of admitting anyone who applied, offered courses to the nontraditional student; part-time students, senior citizens, the handicapped, veterans, the unemployed, and housewives entering the workforce for the first time. In 1965, over 60 percent of community college students ranked at or below the thirtieth percentile on the School and College Ability Test (SCAT). Courses in remedial reading, writing and arithmetic were the most offered courses in the American community college (Roberts, 1986). Not surprisingly, the success of students in these institutions was low, with as high as 90 percent failing or withdrawing from remedial courses (Roueche, 1968).

Increased opportunities for women and minorities were encouraged during the 1960's and a shift to "open admissions" took place in colleges and universities in the 1970's (Maxwell, 1980). With the help of increased pressure and funding from the federal government, many colleges began to provide special-admission programs (Boyln, 1988). Upward Bound programs identified large numbers of disadvantaged minority students in high schools in an effort to prepare them for college. By 1970, over a half million students from poverty backgrounds were enrolled in U. S. colleges. The City

University system of New York established an open admission policy that lasted for six years (Maxwell, 1980). Encouraged by these federal programs, colleges and universities across the country instituted learning centers and tutorial programs designed to serve this "new" student (Cross, 1971).

Evolution of the Learning Assistance Center

Although the term, "learning assistance center" has only been used since the early seventies, the evolution of the modern center has been taking place for a number of years. This evolution appears to have been influenced by several movements. One movement, began with "how to study" programs as early as 1916 and evolved into administrative units that currently assume a diversity of functions (Enright, 1975; Maxwell, 1980, and Enright and Kerstiens, 1980). Maxwell (1980), stated that: "From a historical viewpoint, learning centers are merely the latest development in a long series of attempts to help students adjust to the academic demands of college" (p. 105).

In an extensive search of the professional literature, Enright (1975) determined the early origins of the learning assistance center. Although, not without some overlap, her review of the literature fell into five historical periods. "Seen cynically, the stages might appear cyclical, however, this development of the learning assistance center viewed retrospectively can be considered evolutionary and, in some respects, revolutionary" (p. 82). Enright's study summarized the evolution of the college learning

center from 1916 through 1974 into periods of development which provided a convenient format for understanding the history of the learning center.

The first period was termed, by Enright (1975), as the "Age of Clinical Aspiration: Programs Become Scientific 1916-1940". It was early in this period that colleges began to teach students how to study. "The idea that a student could study to become a student is traced to a study skills guide meant for high school and college students, first published in 1916" (p. 82). Many of these same skills, reading textbooks, notetaking, test taking strategies, vocabulary building, and listening are offered in modern learning assistance centers.

During the 1920's and 1930's, these "how to study" courses were directed at freshmen or students on academic probation. The University of Buffalo required successful completion of a three week summer course for underachieving freshmen before they could be admitted.

Reading emerged during the 1930's as a very important skill and was included in most how to study programs. It was at this time that the college adult reading programs became part of the psychology laboratory where instrumentation was used to move the "art of study" to the "science of study." Maxwell (1980) stated:

> The tachistoscope and other devices developed and used in psychological research on vision and perception were adapted by college reading specialists who attempted to apply research findings such as Javal's work on eye movements, Buswell's on mature reading, and those of Huey, Tinker, and many others (p. 106).

This Age of Aspiration was summarized by Enright as follows:

> The idea of skills instruction, the relation to professionalism, the need for specificity or treating a problem in small parts, the seductive power of hardware or mobilizing all available resources are concepts which would later reappear in the Learning Assistance Center model (1975, P. 83).

The second period described by Enright (1975) was "The Age of Disenchantment: Remedial Reading is not the Answer 1940-1950". During the 1940's, remedial reading programs had wide support. During this time, an effort to recognize individual differences through personal counseling, small groups and individual choices, was identified in Enright's study. This choice of methods was an attempt to provide a reasonable compromise over individualized programs which were considered too expensive.

The importance of counseling, and the notion that learning assistance was appropriate for all students rather than only the ill-prepared student began to be recognized. Robinson (1970) stated:

> Later in the 1940's it became obvious that practically all students needed student personnel assistance, and the slogan of the times became 'guidance for all.' This meant that not only weak but also average and superior students needed help. Good students were found to have not only skill disabilities and personal problems, but also inefficient study methods (pp. ix-x).

It was during this "Age of Disenchantment" that the use of the term "remedial" became inappropriate . With upper division students using study methods and services, the term "developmental" was favored over "remedial" as the term to describe new goals in reading and study methods programs. As Enright (1975), stated:

> ...reading remediation was not enough, that other difficulties interfering with student achievement must be treated, and that if one way of handling

> the student's problem does not seem to yield results, another way might be attempted (p. 84).

"The Age of Integration": Programs that Treat the Whole Student 1950-1960" was the term used by Enright (1975), to describe the third period identified in her study. The focal point of this period was the question of "Why do study skills reading programs treat only one facet of the students skills when many factors work together to insure his academic success, and when all students do not learn the same way or share the same weakness?"

During this period, learning assistance began to assume a service function rather than the earlier status as a general education course or laboratory classification. The student began to be recognized as a whole person and an attempt was made to work with the individual. More learning assistance programs began to be developed under the auspices of student services and counseling services.

The concept of service led to the development of "learning modules and the drop-in clinic" (p. 86). Maxwell (1980) wrote:

> Programed learning materials were being developed by the late 1950's at a rapid rate as a result of B. F. Skinners ideas. The new technology and philosophy made possible the development of individualized reading programs at the University of Florida (Spache, 1959); University of Maryland (Maxwell and Magoon, 1962, Maxwell and Magoon, 1963); and at the University of Minnesota (Raygor, 1965). Other colleges soon adopted self-instructional programs (p. 108).

The fourth period was termed "The Age of Actualization: Good Ideas Become Realities 1960-1970". During this time period, the lab was the stage for learning assistance. "Self-paced,

ındıvıdualızed learnıng became an actualıty wıth the ımplementatıon of programed ınstructıon" Enrıght, (1975, p. 86). In a report by Raygor (1965), he descrıbed a self-paced program developed at the Unıversıty of Mınnesota ın 1958. The program consısted of dıagnosis, planning learnıng actıvıtıes, practıce and evaluatıon. As the clıentele for study skılls programs became more sophıstıcated, thıs type of programed self-ınstructıonal materıals were more approprıate for theır needs.

Other events, ıncludıng the advent of ınstructıonal technology and the use of computer and vıdeo tape, contrıbuted to the systems approach to readıng and study skılls. Enright (1975) summarızed the effectıveness of ındıvıdualızed ınstruction durıng thıs perıod as follows:

> In two studıes comparıng methods of course organızatıon, self-paced or programed courses were shown especıally benefıcial for the freshmen and the upperclassmen wıth lower abılıty and for the student who might otherwıse drop out of a study skılls program. Programed, self-ınstructıonal materials allowed the reading and study skılls programs to meet the changıng needs of theır more sophisticated clientele. Graduate students enrolled ın Stanford's program and 44% of the applıcants to another program recorded college board scores ın the upper half of the dıstrıbutıon of the unıversity students. The subjects ın nıne of twenty-two studıes revıewed by Entwistle were 'college students' ınstead of 'freshmen' (p. 87).

It was near the end of this perıod that the term "lab" evolved ınto "center". The dıversıty of servıces was also reflected ın titles. As many as 15 dıfferent center tıtles were found ın the lıterature to descrıbe learnıng assıstance programs (Enrıght, 1975).

The fıfth perıod descrıbed by Enrıght was termed "The Age of Systematızatıon: The Learnıng Center ıs Organızed 1970-1980." It was

Christ (1971) who first coined the term Learning Assistance Center and who formulated the concept as:

> A place concerned with the learning environment within and without, functioning primarily to enable students to learn more in less time with greater ease and confidence; offering tutorial help, study aids in the content areas, and referrals to other helping agencies; and serving as a testing ground for innovative machines, materials and programs (p. 35).

This concept was further echoed by Lenning and Nayman (1980), who wrote that "a learning center not only designates a service but reflects a philosophy--that of mobilizing campus resources to assist students to make maximum use of the learning environment (p. 95).

According to Enright and Kerstiens (1980), ". . . learning centers flourished and professional interest focused on counting, categorizing, conceptualizing and evaluating learning centers" (p. 9). Many new centers were developed during this time. A survey conducted in 1974, found that over 57 percent of the 761 programs had become operational after 1970 (Smith, Enright and Devirian, 1975).

As Boylan (1982) stated,

> The new terminology and definition not only clarified what was happening in many places across the country, it also provided direction and legitimacy for these happenings. Furthermore, it resolved an identity crisis for the professionals who were making it happen (p. 6).

Boylan (1982) also believed that this expansion and maturity of programs, as well as the professional growth of those who worked in learning assistance would influence educational historians to regard this period of 1970-1980 as "The Golden Age of Learning Assistance."

McGrath (1971) listed several factors that influenced the growth of learning assistance centers including: decelerating enrollment,

changes in admission policies, renewed interest in teaching students to learn, endangered financial support and the belief that learning continues beyond formal education.

This historical perspective was summarized by Enright (1975), as follows:

> The historical irony of the learning assistance center is that, while it embodies most of the educational philosophies theorized since 1900, it works actively for futuristic education. Its present status reflects the diverse range of its origins and the snowball sequence of its development. The next stage in the history of the Learning Assistance Center may well be its systematic integration into the campus as a whole--taking its rightful place as the support service for the academic community (p. 88).

A second influence on the evolution of the learning assistance center was the growth of educational technology within libraries, (Ellison, 1973; Peterson, 1975; Sullivan, 1979). Peterson (1975) wrote that "Historically the movement has been a gradual planned progression, beginning with libraries which placed emphasis on print media which reacted to requests and provided services for a wide variety of consumers" (p. 15).

This view of the evolution of learning centers began in the 1950's due to improvements in available technology and the change in educational attitudes that occurred during this same time (Peterson, 1975). Libraries, which had traditionally placed their emphasis on printed material, assumed responsibility for audio-visual use and production. Libraries then became centers that provided resources for learning as well as instruction (Thum, 1980).

In her book, Learning Centers, Bennie (1977), stated that "Librarians have contributed to learning centers the concept of wide

utilization of all resources for learning through independent study . . ." (p. 29). In the 1960's, these centers were fostered by increased federal and private funding for individualized instruction and improved audio-visual equipment in libraries (Burns, 1991).

Although this history of the evolution of learning centers is much shorter and somewhat more vague than Enright's, both Sullivan (1979) and Peterson (1975) viewed learning centers as having developed out of a desire to improve instruction through individualized learning and educational technology. Peterson's (1975) view of a learning center was best stated as "The concept of the learning center has been analyzed as the four-part amalgamation of library, audio visual, nontraditional and instructional development services" (p. 22). This type of center provided facilities that included a place for materials, educational resources and technology. This facility was considered more material-centered than student-centered. According to See, (1974) this learning center is "a place where learning materials and students are brought together under some kind of human mediator. The instructional interaction is primarily, though not exclusively, between students and materials" (p. 150).

Although many librarians acknowledged and embraced this change in focus for libraries, many resisted. This resistance may have actually helped the continued evolution toward the modern learning center. Maxwell (1980), believed that

> Improvements in educational technology and the resistance of many college librarians toward integrating media and self-paced instructional materials into their regular collections were other factors precipitating the development of learning centers (p. 109).

In the decade since Enright's study was published, learning centers have continued to flourish, despite a reduction of funds available from the federal government (Boylan, 1988). The emphasis of the 1980's was on increasing professionalism in the learning assistance field (Champaigne, 1980; Rouche, 1984; Miles, 1984; Maternlak and Williams, 1987).

In 1980, The Council for the Advancement of Standards for Student Services/Developmental programs (CAS) was formed for the purpose of "Developing written professional standards, disseminating those standards to the profession at large, and aiding in the implementation of the standards" (ACPA Developments, 1986, p. 1). In 1986, these standards were published with a functional area document for the standards and guidelines for learning assistance personnel (Maternlak and Williams, 1987).

Several professional organizations, publications and training programs were started in the late 1970's (Boylan, 1982). As the focus and direction of learning assistance centers has been refined, many of these organizations and publications have been renamed to more accurately reflect the continued evolution of learning assistance during the 1990's and beyond.

Organization and Administration of Learning Centers

There were over 2500 learning assistance programs in American colleges and universities in 1988 (Boylan, 1988). These programs served a diverse clientele with all levels of academic functioning.

Studies have found that learning assistance clientele can be appropriately categorized as remedial, preventive and developmental (Devirian, Enright and Smith 1975; Roueche and Snow, 1977; Sullivan 1979; Boyle 1980 and Dempsey 1985).

Sullivan (1979) surveyed institutions of higher education and discovered that although at least half of all educational institutions in the United States are demonstrating some commitment to learning assistance programs, the programs differed in both function and name from one institution to another. He did however, find several common trends that ran through these centers. "Typically, each sought to limit unnecessary college dropouts, enhance learning skills, minimize the trauma of academic failure, and ultimately improve the academic performances of their students" (p. vii).

The need for learning assistance has not declined, but it has become necessary for colleges to carefully organize programs to meet the needs of their students. Martin, Lorton, Blanc and Evans (1977), wrote:

> A comprehensive center should offer assistance to all students regardless of their present stage of development. This means designing programs to serve those with remedial needs and developmental needs, as well as programs for those who are gifted (p. 7).

Maxwell, (1980) in her book, Improving Student Learning Skills, outlined goals that were applicable to learning assistance programs.

1. Provide academic support for students who lack the educational background for college work.
2. Ensure student retention in college and subsequent graduation.
3. Help students develop their self-concepts as learners.
4. Help students develop self-confidence and reduce fear of failure.

5. Improve human relations and the sense of campus community among students.
6. Provide individualized help.
7. Provide help in developing study skills.
8. Improve academic performance. This goal is concerned with improving the academic performance of students who are performing at academically successful levels, but may be capable of doing better work.
9. Assist students in becoming more independent, self-confident, and efficient learners who will be better able to meet the university's academic standards and attain their own educational goals (1980, p. 112).

Christ (1984) outlined the key components of a learning assistance model at California State University-Long Beach. He included the following:

1. Study Skills
2. Diagnostic testing
3. Printed learning materials
4. Audio-visual media
5. Tutorials
6. International students conversation lab
7. Staff training
8. Publicity (p. 4)

In a survey of Southeastern colleges, Haynes (1989) found that learning centers have evolved to become very similar within the institutions surveyed. She found seven major services provided by most learning assistance programs. These services were:

1. Remedial/developmental courses
2. Diagnostic testing/assessment
3. Academic advising
4. Counseling
5. Tutoring
6. Study skills
7. Reading/writing improvement (p. 134).

Van (1990) identified twelve variables which are related to successful learning assistance programs. These included:

1. Planning and design of the program
2. Institutional policies and procedures for developmental education.
3. Amount of administrative support.

4. Integration of the developmental education program into the structure of the institution.
5. Qualifications and number of staff members.
6. Types of instructional methodologies.
7. Types of support services.
8. Strategies for the assessment and placement of students.
9. Methods for evaluating programs
10. On-going staff development.
11. Management style of the program administrator.
12. Programs as open systems (p.117).

Burns (1991) determined key characteristics of learning assistance programs through an analysis of the history and evolution of learning centers, combined with definitions, goals and the components of learning assistance centers. These characteristics included:

1. Identifying and recognizing individual learning differences.
2. Providing a learner-centered environment.
3. Identifying learning obstacles.
4. Prescribing (in some cases making referrals), program materials.
5. Providing activities to address learning obstacles.
6. Providing some follow-up and/or evaluation to ensure learning has taken place (p. 35).

The Delphi Method

The Delphi Technique was developed in the early fifties by employees of the Rand Corporation in order to obtain expert opinion regarding urgent defense problems of the U. S. (Dalky, 1969). The technique was named after the Greek oracle at Delphi who was typically consulted about the future. The name Delphi, then, has come to be associated with forecasts of the future (Uhl, 1983; Delbecq, Van de Ven and Gustafson, 1975).

According to Rasp (1973) the Delphi technique is a "Carefully designed program of sequential individual interrogations interspersed

with information and opinion feedback" (p. 29). The goal is to collect judgments and establish consensus regarding future probabilities for such variables as time quantity and desirability of some future state (Rasp, 1973). Dalky (1969)) characterized the three main features of the Delphi technique as:

1. Anonymous response: opinions of members of the group are obtained by formal questionnaires.

2. Interaction and controlled feedback: interaction is effected by a systematic exercise conducted in several interactions, with carefully controlled feedback rounds.

3. Statistical group response: the group opinion is defined as an appropriate aggregate of individual opinions on the first round (p. 4).

The anonymity of the technique allows consensus among members of the group, while avoiding the problems that can arise from personal interaction. Strong and compelling personalities cannot overpower logical analysis of the situation being considered. Opinions are exchanged through an intermediary who controls feedback. Participants are unknown to each other and individual responses are never attributed to particular respondents (Weaver, 1971; Enzer, 1969; Gordon and Ament, 1969).

Each participant submits his/her opinion individually on a survey. The results of each round are collected and returned to the participants, who can then revise their original opinions or explain their divergent positions. This process or rounds, continues until each participant understands all other positions and all are satisfied with their individual positions (Phi Delta Kappa, 1984).

Three critical conditions for Delphi research that were identified by Delbecq, Von de Ven and Gustafson (1975) are:

"1) adequate time, 2) participant skill in written communication and 3) high participant motivation" (p. 84). If these three conditions cannot be met, then the Delphi technique will not provide the intended results.

Through participant motivation and communication, a consensus can be reached regarding possible future developments. Weaver (1971) described the Delphi technique as an "intuitive methodology for organizing and sharing expert forecasts about the future" (p. 267). Although consensus is key to the process, the technique does not actually produce "truth", but rather what might be (Ezell and Rogers, 1978).

Several uses have been found for Delphi studies in futures research. According to Hencley and Yates (1974),

> They have been considered useful for predicting alternative futures in addition to those indicated by current trends; for identifying expected societal and technological innovations; and for estimating the probability and time of occurrence of each of a number of alternatives (p. 99).

Although the Delphi technique was originally developed as a procedure to research defense issues, higher education has recognized the value of the process. As early as 1966, Helmer (1967) suggested that the Delphi technique could be used for educational planning. He stated that the Delphi "can be applied to all phases of educational planning, at the federal, state, local or individual institutional level" (p. 6).

Judd, (1972) cited five major uses of the Delphi in higher education: cost effectiveness; cost-benefit analysis; curriculum and campus planning, college university-wide and state-wide educational

goals and objectives; consensus on rating scales; values and other evaluation elements and generalized educational goals and objectives for the future (p. 35).

Cypert and Gant (1970) used the Delphi technique to elicit preferences from the faculty of the Schools of Education at the University of Virginia and "other concerned individuals." Long (1991) used the Delphi process with professors of adult education to obtain consensus on the use of technology, research methodology and relationships with business and industry in determining continuing higher education.

Gordon and Ament (1969) found the Delphi technique useful in developing a large set of specific technological and societal forecasts for the State of Connecticut. Hopkins (1972) used the technique for a state-level study of the future role of vocational and technical education in Oklahoma. A doctoral study by Tiedemann (1985), using the Delphi technique to predict the future of higher education media services, provided decision-making information for use in long-range planning by instructional technologists and academic administrators.

Baker (1988) used the Delphi technique to survey experts in education, business and industry and Vocational Education to identify the essential criteria that characterized a technologically literate person. The results were used to develop a definition of technological literacy.

Vela (1989) attempted to identify the responsibilities and competencies that would be required for counselors in the California

community colleges in the 1990's. Burns (1989) used the Delphi technique to validate the level of significance in practice of key components and characteristics of learning assistance centers. A learning assistance model for the California Community College System was developed from the results of this study.

Summary

Learning assistance is not new to higher education. The need to provide help to students in order for them to be successful in completing college work has been present since the first colonial colleges opened their doors. The way colleges have perceived those students, and the type of support that was provided to them, has changed, depending on the mood of the country, the number of potential college students and the availability of federal funding.

The learning assistance movement began with the provision of a "how to study" booklet in an effort to save those students who were not prepared to perform college-level work. It has currently evolved into the comprehensive learning center designed to provide services to all students, whatever their current academic needs might be.

The modern learning assistance center has combined both the concept of developing student learning skills and providing educational resource media for individualized learning and instructional support. Although individual learning centers tend to provide services designed for their students' needs, there is a common thread that runs through all centers; the goal of improving academic performance. Key goals, and components of successful

assistance centers have been identified and serve as models for the comprehensive learning assistance program.

The Delphi method was developed in the early fifties to obtain expert opinion regarding defense issues. It has since been recognized by educators as a valuable tool to help forecast and plan for the future. A consensus of opinion is reached by surveying experts and refining the responses from each round of questions. The anonymity of the technique allows freedom of opinion and prevents strong personalities from influencing the eventual consensus.

CHAPTER III

METHODOLOGY

The purpose of this study is to reach a consensus among recognized experts in the learning assistance field as to the services that should be offered by college learning assistance centers by the year 2002. This chapter outlines the method of collection and analysis of the data pertaining to the purpose and objectives of the study.

Procedure

Information for this study was obtained using a Delphi Technique. This research design was developed by Dalkey and Helmer (1963), and revised by Delbecq, Van deVen, and Gustafson (1975). The technique is a methodology for exploring the future to provide leaders with relevant decision making information. The objective is to obtain a consensus of opinion from a group of experts through written responses rather than bringing individuals together (Delbecq et al. 1975).

The technique involves several rounds of questionnaires. Generally, consensus is reached after two or three rounds, thus providing a fairly reliable estimation of future events. Multiple rounds are used to allow panelists to reconsider their responses based on the summaries of previous rounds.

This process of iteration between the rounds of a Delphi study facilitates consensus building.

Numerous researchers and scholars have concluded that the Delphi technique is helpful in drawing scenarios of the future useful to long range planning and other leadership activities (Cetron, 1969; Dalkey, 1967; Hartman, 1981; Helmer, 1966; Judd, 1972; and Murray, 1968).

Rosenbaum (1983) was more specific as to the usefulness of Delphi studies for long-range planning ". . . the Delphi has become one of the most flexible and frequently-used means of anticipating changes in needs based on estimates of future events" (p. 2). According to Cetron (1969),

> . . . a technique that incorporates the consensus of participant experts should be of inestimable value in planning for the users allocation of research and development resources as well as other future-oriented requirements (p. 146).

Population

For this study, officers from three major learning assistance organizations were asked to nominate individuals whom they believed were experts in the field of learning assistance. Each officer from the College Reading and Learning Association, Midwest College Learning Center Association and National Association for Developmental Education was asked to nominate three to five experts whom they considered to be leaders in the development of learning assistance centers (See Appendix A).

This method of selection is in agreement with Harmon's (1975) considerations of identification of experts. He stated:

> A reasonable definition of expertise involves recognition and approbation of peer groups; to wit, someone is an expert in his [sic] field if others in his [sic] field consider him [sic] to be an expert. Some measures of expertise, by this definition are the holding of office in the national organization, the holding of a position, . . . and awards. When a variety of professionals in a field are polled about whom they regard as an expert, and the same individuals keep being mentioned, those individuals must be considered experts (p. 5).

A total of 50 (n = 50) separate names were received, with the 25 receiving the most nominations being selected to participate in the study.

The 25 experts selected for the study were each mailed a letter explaining the purpose and objective of the research. A self-addressed post card, with space for a signature and an indication of a willingness to participate, was included with each letter (See Appendix B). Twenty-one (n = 21) experts agreed to participate in the study.

The 21 experts represented 17 states and included two-year, four-year, and five-year plus institutions. The experts were employed at both public and private institutions ranging in student population from 700 students to 40,000 (See Appendix C).

Instrumentation

The future of learning assistance centers, and how they would fit into the higher education equation in the Twenty-First Century has been the topic of speculation in several reports (Enright and Kersteins, 1980; Champaigne, 1980; Boylan, 1983; Koechenour, 1984;

and Dempsey, 1985). To accomplish the purpose and objective of this study, it was necessary to obtain expert opinions on the future services of learning assistance centers. As a group process which uses written responses from experts, the Delphi technique was considered appropriate for this study.

The Delphi technique has been found to be useful as a forecasting tool to provide information for future directions of research and education (Hopkins, Ritter and Stevenson, 1972). According to Brockhaus and Michelson (1977), Delphi is used primarily in applied research for the purpose of planning and forecasting. Helmer (1966) felt that the Delphi study could be used effectively for "all phases of educational planning" (p. 6).

The Delphi technique consists of one or more rounds of a questionnaire. Judd (1972) maintained that there is no one method for conducting a Delphi study. He stated that the initial round may consist of a set of prepared statements in a structured format or it might use open-ended questions. Several researchers caution against the use of time consuming and lengthy questionnaires which could negatively impact the return rate (Judd, 1972; Delbecq, Van de Ven and Gustafson, 1975; Linstone and Turoff, 1975; and Erdos 1983).

This study used a three probe Delphi technique to conduct the research. The panel consisted of 21 experts in the field of learning assistance. These experts represented seventeen states and both public and private two-year community colleges, four-year colleges, and five-year + universities with graduate programs (See Appendix C).

According to Delbecq et al. (1975), the sample size of 21 fell within the recommended range of 15 to 30 participants.

> Our experience indicates that few new ideas are generated within a homogeneous group once the size exceeds 30 well chosen participants. However, the panel size is variable and a minimum number of ten to fifteen is required to generate sufficient new ideas for group processing (p. 89).

A series of three questionnaires was mailed to the 21 experts. The first probe asked one, open-ended question: "Based on current trends, what are your projections regarding services that should be offered by college learning centers by the year 2002?" This question was generated by an advisory committee consisting of three members and the researcher. The question was presented to several members of the National Association of Developmental Educators during the national convention in February, 1992. These members were asked to review the question for clarity and explicitness. The results of this review led to some minor changes to increase understanding and readability (See Appendix D).

The first round generated 224 services which were then reduced to 47 services by a review panel. These services provided the basis for the second questionnaire (See Appendix E). On the second questionnaire, the Delphi panel members were asked to rank the 20 most important services from the 47 that were generated by Delphi I (See Appendix F). Results from the second probe were used to develop the Delphi III questionnaire in which each expert was asked to prioritize the essential services and justify their responses (See Appendix G).

Collection of Data

The Delphi I questionnaire was mailed to each panelist within one week after all the experts agreed to participate. Each of the three questionnaires was accompanied by a cover letter which stated the purpose of the questionnaire, provided additional information and thanked the panelists for their participation. A self-addressed stamped envelope was enclosed for the return of each questionnaire. The deadline for return, was clearly stated in the letter. In each of the three probes, those who did not meet the deadline were contacted within one week by a follow-up letter. Those panel members who did not respond to the follow-up letter in one week were contacted by telephone.

The panelists were assured of confidentiality and only knew that they were one of 21 experts chosen to be part of the study. Uhl (1983) believed that this process of communication, besides saving time and money, permitted independent thought among panelists, and assisted them in the gradual formation of a considered opinion. This eliminated the tendency to be influenced by persuasively articulated opinions or peer pressure.

Delphi I asked one, open-ended question: "Based on current trends, what are the services that should be offered by college learning assistance centers in the year 2002?" Panelists were instructed to answer the question with as many brief and concise statements as they felt were necessary. This first questionnaire served as the beginning point for the study (see Appendix D). Two-hundred twenty-four responses were identified by the panelists.

(See Appendix E). A review panel sorted the responses into like services and developed a one word descriptor for each unique service. The panel then identified the response that most clearly described each service. A total of 47 unique services were identified.

Delphi II was constructed from the responses sorted from the first probe. The 47 services identified from Delphi I were placed on a total of three pages. This provided sufficient space for the instructions and the listing of the services. The participants were instructed to rank the 20 most important services that learning centers should provide by the year 2002. One (1) was the highest ranking and 20 (20) was the lowest. Space was provided at the bottom of the instrument to encourage additions and comments (See Appendix F).

Delphi III was a further refinement of Delphi II. The 20 most important services were listed in rank order of the responses to Delphi II, along with the number of ranking points received. Each panelist also received information on how they ranked each item in the second probe. Space was provided for comments and justification for each of the participants responses (See Appendix G).

Analysis of Data

Delphi I

Analysis of the first questionnaire was done by a review panel consisting of a director of institutional research, a director of retention and a director of a college learning center. Each of the responses was analyzed according to the type of service it

represented. A descriptor was identified for each response, and the responses were grouped into like categories. This procedure was conducted at three different intervals to narrow the 224 responses to a final 47 services.

The response with the clearest representation of the category, as determined by the review panel and the researcher, was selected to be the statement on the second questionnaire. The second probe consisted of the 47 services and space for additional services or comments.

Delphi II

The analysis of the second questionnaire was conducted by summing the number of points that each service received. The relative rank of each service was determined by the total number of points received. Panelists were asked to select the 20 most important services from the 47 listed in the Delphi II questionnaire. A group value was determined for each service by assigning a value of 20 points to each "1" rank and a value of 1 point to each "20" rank. The total group value then determined the final ranking of each service. The service receiving the most rank points became service number 1, the next highest number of rank points became service number 2, et cetera. This followed the procedure outlined by Brooks (1979), Dean (1986) and Baker (1988).

Delphi III

The purpose of Delphi III was to reach final consensus of the most important services generated in Delphi I. This final probe

directed the panel to re-evaluate the top 20 services identified by the second round. The priority rank that each panelist had assigned in Delphi II was listed on the survey, and the panelists were asked if they still agreed with their choice. If there was disagreement, the panelists were instructed to make changes and justify these responses (See Appendix G).

Statistical analysis consisted of two methods. Ordinal level descriptive statistics were calculated to determine the mean scores, deviation scores and standard deviations of the services ranked in Delphi III. Raw scores were entered into the Statistical Package for the Social Sciences (SPSSX) program to calculate the means, standard deviations, highest and lowest ranking, and N for each of the services. By ranking the means, the list of services that should be offered by learning assistance centers in the next ten years, could be placed in priority rank as judged by the panelists.

The Kendall Coefficient of Concordance (W) was used to determined the degree of association among the experts on Delphi III. The Kendall (W) is described by Siegel (1956), as a type of correlation test which is useful in determining the extent of agreement among judges on a number of issues. It was calculated by finding the rank sum of all panelists on each service expressed as a deviation. The mean was then calculated and the deviations squared. An alpha of .05 was established by the researcher to measure the level of significance. The null hypothesis for the Kendall (W) was:

Ho: The rankings by the individual experts are unrelated.

Statistical testing of the Delphi technique is severely limited due to the use of value judgements rather than quantitative data.

This limitation was addressed by Dalkey (1969) in his statement:

> . . . the question of the validity of the procedures is much more obscure when value judgments are involved. The prevailing opinion at the present time appears to be that there is no clear sense in which value judgements can be said to be true or accurate. Hence, it is of practical importance to ask whether there is any objective way to test Delphi procedures in the value area (p. 73).

Delbecq et al. (1975) contend however, that a consensus of opinion from a representative sample of experts from across the nation has value, and can provide a reliable source of information.

CHAPTER IV

PRESENTATION OF FINDINGS AND ANALYSIS OF DATA

In order to attempt to understand what learning assistance will be available to college students in the Twenty-First Century, it was necessary to determine what services should be offered by learning assistance centers in the next ten years. Through the refinement process of the Delphi Technique, these services were identified, and a value for each was judged by the panel of experts through a series of three mailed questionnaires.

This chapter is a presentation of the findings in relation to the research questions. The presentation of findings and analysis of the data is arranged with the results of each of the Delphi probes. Information identifying the response data, comments and justification for the panelist's choices, and the analysis procedures are included for each probe. The services that were identified by the panel of experts is presented with an explanation of the identification process and ranking results. The final section presents the findings of the analysis of the third probe (Delphi III) where the services were given a final priority rank.

Response Data

Delphi I

Research Question Number One. What are the services that should be offered by learning assistance centers in the year 2002?

This open-ended question allowed the panelists to respond freely without limitations. The instrument and cover letter were mailed to each panel member on March 6, 1992, with a request to return the completed questionnaire by March 16, 1992. The cover letter described the purpose of the study and asked the panel to identify the services they believed should be offered by learning assistance centers in the future (See Appendix B).

Fifteen of the 21 panelists responded within the requested time periods, and two more responses were received the next week. After follow-up requests by telephone, the four remaining panelists responded, for a 100 percent return on Delphi I.

A total of 224 responses was generated by the participants. A review panel of three members and the researcher analyzed the responses and divided them into 47 services. A list of the 47 services can be found in Table I.

Additional information was provided by the panel members. One member enclosed a list of learning assistance services that had been generated by a professional organization. Three panelists provided forecasts of major trends in education as well as learning assistance services. One panel member described how learning assistance must change the focus from service to research on methods. Two respondents provided bibliographies on appropriate materials.

TABLE I

SERVICES THAT SHOULD BE OFFERED BY LEARNING ASSISTANCE CENTERS IN THE YEAR 2002

Synopsis of Delphi I Responses
1. Academic evaluation/diagnostic testing.
2. Learning strategies courses and workshops.
3. Tutor training.
4. Bridge programs for underprepared students.
5. Writing center.
6. Supplemental Instruction.
7. Peer/professional tutoring.
8. Critical thinking skills development.
9. College preparatory coursework.
10. Math resource center.
11. Collaborative/cooperative learning groups.
12. New student academic orientation and courses.
13. Certification services for tutor training and staff development.
14. Promotion and packaging of study strategies and prevention info.
15. Research with faculty on teaching and learning at the college level.
16. Faculty/staff development workshops.
17. Stress/anxiety management e.g. math, writing, science, testing
18. Academic support program with specific groups on campus e.g. adults/probation/ minority . . .
19. Student assessment and placement for the entire campus.
20. Academic advising.

TABLE I (Continued)

Synopsis of Delphi I Responses
21. Learning styles assessment and training.
22. Computer assisted instruction.
23. Counseling.
24. Freshman year experience.
25. Open entry/open exit classes in basic skills.
26. Disabled student assistance programs.
27. Outreach services to dorms and campus groups.
28. Test accommodation services.
29. Expanded evening and weekend services--on and off campus.
30. Standardized test preparation e.g. ACT, GRE, LSAT, MCAT . . . .
31. ESL/Bilingual/second dialect assistance.
32. Assistance to grad students e.g. thesis/ dissertation/orals.
33. Outreach to public school personnel.
34. Student development services e.g. self assessment, student potential . . .
35. Instruction to promote global view of the world.
36. Multi-media services.
37. Develop partnerships with business.
38. Honors program activities.
39. Advocate services/mentoring.
40. Outreach to teacher training programs.
41. Computer research skills training.

TABLE I (Continued)

Synopsis of Delphi I Responses
42. Telecommunications-based distance learning activities in support of individual/independent study.
43. Provide group work/study areas.
44. Computer software workshops.
45. Career planning.
46. ABE/GED instruction.
47. Educational exchanges to promote international access and scholarship.

Two of the respondents included statements to explain and verify their choice of services.

Delphi II

Research Question Number Two. What should be the relative importance of each of these services?

The response that identified the services in Delphi I provided the design for the second questionnaire. The purpose of the second probe (Delphi II) was to prioritize the 47 services generated in Delphi I to determine the relative importance of each service. It also allowed the panel the opportunity to generate additional services that were not considered in the first questionnaire. There were two additional services added to the second probe.

The second probe was mailed May 15, 1992. The cover letter (See Appendix F) explained the procedure used to determine the 47 services that formed the Delphi II instrument. Panelists were asked to:

(1) indicate the 20 most important services with a check mark,

(2) rank these 20 services on a scale of one through 20, with "1" being the most important,

(3) add new services and make comments to justify their selections, and

(4) return the instrument by June 8, 1992.

All of the 21 panelists responded to Delphi II for a 100 percent return rate. Fourteen of the panelists responded before the requested deadline, four responded on the deadline and the remaining four panelists responded within a week of a follow-up telephone contact.

Two respondents each added a service that they believed was not covered by the initial questionnaire. These were analyzed by the review panel and judged to fit into the original forty-seven services. One respondent divided the responses into what he considered to be six important areas and ranked his choices within the six areas. One respondent cautioned that some of the services might be appropriate for colleges with graduate programs but not for community or four-year colleges. Two respondents believed that some of the services implied holding students out of "regular" classes and placing them in remedial work. They both believed that developmental programs are the focus of the future rather than remedial classes.

One respondent believed that the range of services indicated that learning centers of the future would have to be "all things to all people." One respondent believed that the range of services was "impressive." Another respondent remarked that his view of the twenty-first century must be more conservative than most of the panelists.

Ranking points were determined by a point system which assigned twenty points for a ranking of "1", 19 for a ranking of "2", etcetra. This procedure allowed the 47 services to be placed in a priority rank to determine the most essential services. The frequency of selection for each item was used to establish the priority rank in case of ties. The priority rankings of the 47 services are shown in Table II along with the frequency of selection.

The most important service identified in Delphi II was "Academic evaluation/diagnostic testing." Although services ranked two, three, four, and eight, had a greater frequency of response, the first

TABLE II

DELPHI II PRIORITY RANK OF SERVICES

Freq.	Rank Points	Rank	Services
16	238	1.	Academic evaluation/diagnostic testing.
17	233	2.	Learning strategies courses and workshops.
17	221	3.	Tutor training.
17	220	4.	Bridge programs for underprepared students.
16	208	5.	Writing center.
14	194	6.	Supplemental Instruction.
14	179	7.	Peer/professional tutoring.
17	169	8.	Critical thinking skills development.
11	168	9.	College preparatory coursework.
12	158	10.	Math resource center.
12	142	11.	Collaborative/cooperative learning groups.
13	141	12.	New student academic orientation and courses.
11	128	13.	Certification services for tutor training and staff development.
9	128	14.	Promotion and packaging of study strategies and prevention info.
14	117	15.	Research with faculty on teaching and learning at the college level.
14	115	16.	Faculty/staff development workshops.
11	105	17.	Stress/anxiety management e.g. math, writing, science, testing
11	103	18.	Academic support program with specific groups on campus e.g. adults/probation/ minority...

TABLE II (Continued)

Freq.	Rank Points	Rank	Services
7	96	19.	Student assessment and placement for the entire campus.
8	94	20.	Academic advising.
12	93	21.	Learning styles assessment and training.
12	92	22.	Computer assisted instruction.
8	91	23.	Counseling.
7	89	24.	Freshman year experience.
8	84	25.	Open entry/open exit classes in basic skills.
10	80	26.	Disabled student assistance programs.
8	77	27.	Outreach services to dorms and campus groups.
7	63	28.	Test accommodation services.
8	56	29.	Expanded evening and weekend services--on and off campus.
7	55	30.	Standardized test preparation e.g. ACT, GRE, LSAT, MCAT . . . .
6	50	31.	ESL/Bilingual/second dialect assistance.
6	43	32.	Assistance to grad students e.g. thesis/dissertation/orals.
8	37	33.	Outreach to public school personnel
7	35	34.	Student development services e.g. self assessment, student potential . . .
2	33	35.	Instruction to promote global view of the world.
5	33	36.	Multi-media services.
5	30	37.	Develop partnerships with business.
4	28	38.	Honors program activities.

TABLE II (Continued)

Freq.	Rank Points	Rank	Services
3	26	39.	Advocate services/mentoring.
6	25	40.	Outreach to teacher training programs.
4	25	41.	Computer research skills training.
5	22	42.	Telecommunications-based distance learning activities in support of individual/independent study.
5	18	43.	Provide group work/study areas.
1	15	44.	Integration of study strategies into content areas*
1	12	45.	Computer software workshops.
1	12	46.	Career planning.
1	6	47.	Learning skills workshops in classrooms upon request of faculty for specific assistance with time management, textbook reading, memory, etc.*
1	3	48.	ABE/GED instruction.
1	2	49.	Educational exchanges to promote international access and scholarship.

* Additional services included on the Delphi II questionnaire by panel members.

ranked services had consistently ranked higher, which accounted for the higher number of rank points. Out of a possible 21, the frequency of selection ranged from one to 17. The most often picked services were two, three, four, and eight with 17 selections. The frequency of selection of the first 20 services ranged from 17 to eight. One tie occurred in the priority ranking, with both services 13 and 14 receiving 128 ranking points. The frequency of selection determined the priority rank with service 13 receiving 11 votes and service 14 receiving nine votes.

Delphi III

The purpose of the third questionnaire was to reach closure on the most important services that learning assistance centers should offer in the next ten years. The final probe was mailed July 9, 1992, with a cover letter asking the panel to:

(1) examine the 20 services that had been prioritized in Delphi II,

(2) determine if there was still agreement with their Delphi II choice,

(3) change the ranking if they did not agree,

(4) rank these 20 services by assigning a "1" to the most essential, "2" for the second, etcetra,

(5) make comments to justify their choices and

(6) return the instrument by July 24, 1992.

Enclosed with the instrument was a complete report of Delphi II with a listing of the 49 services that were ranked and the frequency of selection as shown in Table II.

The final probe was designed similarly to the second probe. The results of Delphi II provided the design, with the 20 most important services ranked by the points received. The instrument also provided panelist with the rankings that they assigned to the services in Delphi II for reference (See Appendix G). An advantage of the Delphi Technique is that it allows panelists to justify their choices. Space was available on the questionnaire for the panelists to make any additional comments as well as justify their choices. Nineteen of the panelists returned their responses by the July 24, 1992 date. Two respondents dropped out of the study. The priority ranking of the third and final probe is listed in Table III.

The first four services ranked in the Delphi II probe changed places in the final probe, but all remained as the top four services. Service number one, learning strategies courses and workshops, had been ranked as number two on the Delphi II probe. Service number four, academic evaluation/diagnostic testing, moved down from the number one ranking, and service number two, bridge programs for under-prepared students, moved up from the number four ranking. Service number three, tutor training, did not change in rank. Most of the services in the Delphi III probe were ranked close to their ranking from the Delphi II probe. One exception was service number 14, college preparatory coursework, which was ranked as number nine in the Delphi II probe. One panelist, who ranked college preparatory coursework as number 18, believed that "In the future, only college level coursework should be offered through learning assistance centers." One panelist ranked service number 11, collaborative/cooperative learning groups lower because he believed

TABLE III

DELPHI III FINAL RANK OF SERVICES

Delphi II Rank	Rank Points	Delphi III Rank	Services
2	312	1.	Learning strategies courses and workshops.
4	278	2.	Bridge programs for under-prepared students.
3	267	3.	Tutor training.
1	264	4.	Academic evaluation/diagnostic testing.
7	244	5.	Peer/professional tutoring.
6	240	6.	Supplemental Instruction.
5	232	7.	Writing center.
10	211	8.	Math resource center.
8	206	9.	Critical thinking skills development.
11	193	10.	Collaborative/cooperative learning groups.
12	192	11.	New student academic orientation and courses.
13	192	12.	Certification services for tutor training and staff development.
14	192	13.	Promotion and packaging of study strategies and prevention info.
9	185	14.	College preparatory coursework.
15	161	15.	Research with faculty on teaching and learning at the college level.
18	157	16.	Academic support program with specific groups on campus e.g. adults/probation/minority . . .
16	149	17.	Faculty/staff development workshops.
17	143	18.	Stress/anxiety management e.g. math, writing, science, testing

TABLE III (Continued)

Delphi II Rank	Rank Points	Delphi III Rank	Services
19	95	19.	Student assessment and placement for the entire campus.
20	69	20.	Academic advising.

that there was "minimum research to support this service."

Service number five, peer/professional tutoring, which moved up in the ranking from number seven, was described as "The heart of any learning assistance program." Another panelist believed that service number six, supplemental instruction, was just another type of peer/professional tutoring.

Several respondents believed that some of the services did not belong in learning assistance centers and should be referred to other offices on campus. Even though most panelists rated academic evaluation/diagnostic testing high, one panelist believed that " . . . the function of academic evaluation/diagnostic testing should rest with the counseling services." Another panelist stated "evaluation/diagnostic testing should be referred to the testing office." The same respondent believed that service number 18, stress/anxiety management, and service number 20, academic advising should be referred to counseling.

One respondent indicated that service number 15, research with faculty on teaching and learning at the college level, was something that ". . . should rest with a unit other than a learning assistance center . . ." While another believed that it was critical for learning assistance centers to "generate research to determine whether learning theories work in real learning situations."

One panelist was disappointed with the ranking of services from the other panelists. He stated:

> I'm amazed at the lack of foresight among your respondents. From this Delphi II ranking, I tentatively conclude they see learning assistance centers as educational trauma centers fixing up the educational ills of students after they get into trouble rather than preventing trouble from occurring.

Group Scores

To verify the priority ranking of the raw data found in Table III, the raw scores were entered into the Statistical Program for Social Sciences (SPSSX) to determine the rank means, standard deviations, minimum and maximum values assigned and the N for each service. The ranking determined by the mean value of each service did not alter the ranking in Table III determined by rank points. The rank mean scores and standard deviations are presented in Table IV. The standard deviation scores indicate the diversity of ranking by panelists.

The standard deviation scores indicated that service number twenty, academic advising, (3.45) had the lowest standard deviation from the group mean with service number one, learning strategies courses and workshops, (3.64), and service number two, bridge programs for under-prepared students, (3.71) next in value. These lower standard deviation scores indicate that these services had the highest consensus in the ranking. Services number six, supplemental instruction, (6.39), and number fourteen, college preparatory coursework, (6.13) had the greatest standard deviation in the total ranking. These scores indicate considerable diversity in the ranking of these two services.

The Kendall Coefficient of Concordance: (W) was used to measure the relationship of panelist's rankings of the various services. According to Siegel (1956), this measure is useful in determining the agreement among several judges or the association among three or more variables. "It has special applications in providing a standard

TABLE IV

INDIVIDUAL GROUP MEAN DEVIATION SCORES

Services Rank Order	Group Rank Mean	Group Standard Deviation
1. Learning strategies courses and workshops.	4.58	3.64
2. Bridge programs for under-prepared students.	6.37	3.71
3. Tutor training.	6.95	5.24
4. Academic evaluation/ diagnostic testing.	7.11	5.96
5. Peer/professional tutoring.	8.16	5.18
6. Supplemental Instruction.	8.37	6.39
7. Writing center.	8.79	4.12
8. Math resource center.	9.89	3.97
9. Critical thinking skills development.	10.16	3.96
10. Collaborative/cooperative learning groups.	10.84	4.55
11. New student academic orientation and courses.	10.89	5.03
12. Certification services for tutor training and staff development.	10.89	5.97
13. Promotion and packaging of study strategies and prevention information.	10.89	5.58
14. College preparatory coursework.	11.26	6.13
15. Research with faculty.	12.63	5.02

TABLE IV (Continued)

Services Rank Order	Group Rank Mean	Group Standard Deviation
16. Academic support programs for specific campus groups.	12.74	5.12
17. Faculty/staff development workshops.	13.16	4.90
18. Stress/anxiety management.	13.47	5.28
19. Student assessment and placement for the entire campus.	16.00	5.31
20. Academic advising.	16.84	3.45

method of ordering entities according to consensus when there is available no objective order of the entities" (p. 239). The Kendall (W) does show that there was strong agreement among the panelists on the rankings of the 20 most important services. Table V shows the priority rank of services by the panelists and the rank sums data used to compute the Kendall (W) statistic.

The Kendall Coefficient of Concordance (W) test was applied to the 20 services identified and ranked by 19 panelists to test the null hypothesis:

Ho: There is not a relationship between the individual panelists ranking of the 20 most important services.

The resulting W statistic (W = .2809) when computed to a Chi Square value was statistically significant (X^2 = 101.4088, df=19, p <.05). A Chi Square value equal to or greater than 30.14 was required to be significant at the .05 level. Therefore, the null hypothesis was rejected. The Chi Square value indicated a strong relationship among the individual panelist's ranking of the services.

The Kendall (W) was used to test the overall agreement by each of the panelists on the most important services. Siegel (1956) cautioned that a high or significant value of (W) does not insure that the services that were identified and ranked were correct, but it does show that the judges have agreement on the services provided.

The results of the two statistical analyses, mean deviation scores and the Kendall (W) indicate a strong agreement in the ranking of the most important services. These services could be considered as the services that should be offered by learning assistance centers in the year 2002.

TABLE V

PRIORITY RANK OF SERVICES BY PANELISTS

	Twenty Most Important Services																			
Panelist	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
A	1	10	6	5	4	3	13	14	12	8	9	18	7	19	15	11	16	2	20	17
B	13	5	11	3	10	1	8	9	7	2	4	12	20	6	15	17	14	18	16	19
C	4	15	2	3	1	6	8	10	5	18	19	16	13	9	14	17	7	11	20	12
D	3	11	8	7	15	5	16	13	14	4	17	9	1	12	10	6	18	2	19	20
E	6	4	3	10	11	7	13	12	9	8	5	2	14	20	1	17	18	15	16	19
F	6	2	4	17	3	20	13	19	9	14	1	5	7	18	11	10	15	8	12	16
G	1	6	19	15	17	16	3	2	7	9	11	18	13	10	4	8	5	12	14	20
H	9	4	1	5	18	3	12	7	11	8	10	2	15	6	16	17	20	14	19	13
I	1	9	5	18	4	3	6	7	15	13	8	14	2	12	16	11	10	20	19	17
J	1	11	8	9	6	12	3	4	5	13	17	14	15	7	18	20	16	19	2	10
K	8	1	3	2	4	13	12	10	14	16	7	5	11	15	17	19	18	9	20	6
L	2	6	4	17	3	15	12	11	7	10	16	5	8	1	18	9	14	13	19	20
M	8	2	6	1	7	3	11	9	19	12	14	5	17	15	10	18	4	16	13	20
N	2	9	3	1	7	5	10	14	8	16	15	4	6	17	11	13	12	19	18	20
O	6	2	16	1	12	19	5	8	7	9	13	20	14	3	15	4	10	17	18	11
P	2	5	4	1	7	6	3	10	8	11	12	13	14	9	15	18	16	17	19	20
Q	3	7	8	9	2	17	5	6	16	10	15	13	1	18	14	4	11	12	19	20
R	10	7	17	9	13	2	4	14	12	6	8	15	16	1	5	11	19	18	3	20
S	1	5	4	2	11	3	10	9	8	19	6	17	13	16	15	12	7	14	18	20
Rank Sums	87	121	132	135	155	159	167	188	193	206	207	207	207	214	240	242	250	256	304	320

Total Rank Sums 3990
Rank Sums Mean 199.5
Kendall (W) .2809
Chi Square Value 101.4088
Critical Value at .001 = 43.82
df = 19

CHAPTER V

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Summary

The purpose of this study was to obtain a consensus among recognized experts in the learning assistance field as to what services should be offered by college learning assistance centers in the year 2002. The Delphi Technique was used to identify and prioritize services through group consensus of the panelists.

Education is facing many changes in the nineties, including reduced funding, higher admission standards, changing demographics and calls for accountability. Learning assistance centers must be able to grow and evolve to continue to meet the needs of students and their institutions. The problem of this study is to investigate what services college learning assistance centers of the future should provide.

Two research questions were posed to guide the study. These two questions were:

1. What services should be offered by learning assistance centers in the year 2002?

2. What should be the relative importance of each of these services?

This study used a three probe Delphi Technique to conduct the research. The panel consisted of 21 experts in the field of learning

assistance. These experts represented 17 states and both public and private two-year community colleges, four-year colleges, and five and six-year universities with graduate programs. Through a process of three probes, the panelists identified and prioritized the services that learning assistance centers should offer in the future.

The first probe, Delphi I, asked one open-ended question to generate a listing of the services and answer research question number one, "What services should be offered by learning assistance centers in the year 2002?" The panelists were asked to respond with as many brief, concise statements as they felt were necessary to answer the question.

All 21 panelists responded to the first probe and identified 224 services that they believed should be provided by learning assistance centers. In a through examination by a review panel, the original 224 statements were sorted into 47 categories. These 47 services provided the format for the Delphi II probe.

To verify the 47 services, the panelists were asked to select the 20 most important services and rank those 20 to determine their relative importance. The panelists were also asked to make comments to justify their choices and to add any other criteria they felt should be included in the list.

The Delphi II probe was returned by all 21 of the panelists, for a 100 percent return. The panelists ranked the 47 services to identify the 20 most important services. Two additional services were added to the 47. Both of these services were studied by the review panel and were found to already be included in the 47

categories. The 20 services that were prioritized in Delphi II became the source for the third and final probe.

The purpose of Delphi III was to reach a final consensus by the panel of experts to identify the services that should be offered by learning assistance centers. The final probe also answered the second research question: "What should be the relative importance of each of these services?" Nineteen of the panelists responded to the final survey instrument.

The statistical analysis revealed there was strong agreement by the panelists on the ranking of the 20 most important services. The strongest agreement was on service number 20, academic advising and service number one, learning strategies and coursework. With the exception of service number 14, college preparatory coursework, all of the services that were rated in the top ten on Delphi II remained in the top ten in Delphi III.

Summary of Findings

The following results were obtained after completion of the analysis of data:

1. The panelists generated 224 services that college learning assistance centers should offer in the year 2002.

2. The 224 services were reduced to forty-seven services by examination of a review panel.

3. The 47 services were further refined by the panel of experts and prioritized into 20 services.

4. A consensus of the panelists was reached on the priority rank of importance on the 20 services.

5. There is general agreement among college learning assistance experts as to the services that should be offered by learning assistance centers in the year 2002.

6. Most services identified were designed to enable students who are achieving at all levels to improve their academic performance.

7. The service that were identified were found to be similar to those outlined by Christ (1984), Haynes (1989), and Burns (1991).

8. In addition to similiar services identified by other research, new services including, certification services, critical thinking skills development, and research with faculty were identified.

9. The most evolutionary service identified was research with faculty on teaching and learning.

Conclusions

An examination of the findings led to the following conclusions:

1. Despite the diversity of the institutions where the experts were associated, there is general agreement as to core services that should be offered by college learning assistance centers in the next century. These services are in agreement with studies of current services by Haynes (1989) and Burns (1991).

2. Learning assistance centers are continuing to evolve from providing single skill based information into comprehensive centers providing services for the whole campus community. This supports the concept postulated by Lenning and Nayman (1980) that: "A learning

center not only designates a service but reflects a philosophy--that of mobilizing campus resources to assist students to make maximum use of the learning environment" (p. 95).

3. Learning assistance professionals believe that there is a need to continue to professionalize the field. Research with faculty on teaching and learning will enable learning assistance centers to provide additional services to the campus community. This the emphasis begun in the 1980's, and documented by Materniak and Williams (1987) to professionalize the field of learning assistance and to bring programs into the mainstream of the college learning community.

Recommendations

Based on the findings of this study, the following recommendations are made:

1. As revealed in the findings, the panelists reached a consensus of agreement upon the most important services to be offered by college learning assistance centers. Results of this study should be used by learning assistance directors to plan, implement and evaluate learning assistance programs.

2. Since the panelists consisted of representatives from two-year community colleges, four-year colleges and colleges and universities with graduate programs, a study should be conducted with equal representation of each group to compare the results of this study.

3. Further research should be conducted regarding the combining of research with faculty regarding learning at the college level.

BIBLIOGRAPHY

Baker, D. R. (1988). Technological Literacy: The Essential Criteria for a Definition. (Unpub. Ed.D. dissertation, Oklahoma State University.)

Baker, G. A. III, and P. L. Painter. (1983). The learning center: A study of effectiveness. New Directions for College Learning Assistance: A New Look at Successful Programs, 11, (2), 73-88.

Bennie, F. (1977). Learning Centers. Englewood Cliffs, NJ: Technology Publications.

Boylan, H. (1989). Definitions for developmental education terms. Task Force on Professional Language for College Reading and Learning. Unpublished. Los Angeles: Western College Reading and Learning Association.

Boylan, H. R. (1988). The Historical Roots of Developmental Education. Review of Research in Developmental Education, 5 (3), 1-3.

Boylan, H. R. (1986). Models of student development. Research in Developmental Education, 3 (4), 1-3.

Boylan, H. R. (1985). Demographics and Developmental Education. Research in Developmental Education, 2 (1), 1-5.

Boylan, H. R. (1983). The growth of the learning assistance movement. In H. Boylan (Ed.), Forging New Partnerships in Learning Assistance. San Francisco, CA: Jossey Bass.

Boylan, H. R. (1982). The Growth of the Learning Assistance Movement. In H. R. Boylan (Ed.), New Directions for College Learning Assistance, No. 9. San Francisco: Jossey-Bass Publishers.

Boyle, C. (1980). A Descriptive Survey of Learning Skill Centers in Selected Institutions of Higher Education in the United States. (Unpub. Ed.D. dissertation, Southern Illinois University.)

Brier, E. M. (1984). Bridging the Academic Preparation Gap: An Historical View. Journal of Developmental Education, 8, (1), 2-5.

Brockhaus, W. L. and J. F. Mickelson. (1977). An analysis of prior Delphi application and some observations on its future applications. Technological Forecasting and Social Changes, 10, 103-110.

Brubacher, J. S. (1976). Higher Education in Transition: A History of American colleges and Universities 1636-1976. Third edition. New York: New York University Press.

Burns, M. E. (1991). A Study to Formulate a Learning Assistance Model for the California Community College. (Unpub. Ed.D. dissertation, Pepperdine University.)

Cetron, M. J. (1969). Technological Forecasting: A Practical Approach. New York: Gordon and Breach.

Chapaigne, J. R. (1988). 2001: Future Directions of Learning Assistance Centers. (ERIC Reproduction Services No. ED 205 413.)

Christ, F. L. (1984). Learning Assistance at California State University-Long Beach, 1972-1984. Journal of Developmental Education, 8, (2), 2-5.

Christ, F. L. (1971). Systems for Learning Assistance: Learners, Learning Facilitators, and Learning Centers. In F. L. Christ (Ed.), Interdisciplinary Aspects of Reading Instruction: Proceedings of the Fourth Annual Conference of the Western College Reading Association.

Cross, P. K. (1976). Accent on Learning. San Francisco, CA: Jossey-Bass.

Cross, K. P. (1971). Beyond the Open Door. San Francisco, CA: Jossey-Bass, Inc. Publishers.

Cyphert, F. R. and W. L. Gant. (1970). The Delphi Technique: A Tool for Collecting Opinions in Teacher Education. Phi Delta Kappan, 21, 417-425.

Dalkey, N. (1969). The Delphi Method: An Experimental Study of Group Opinion. Santa Monica, CA: Rand Corporation.

Dalkey, N. C. (1967). Delphi. Santa Monica, CA: Rand Corporation.

Dalkey, N. and O. Helmer. (1963). An Experimental Application of the Delphi Method to the Use of Experts. Management Science, 9, 458-467.

Delbecq, A. L., Van de Ven, A. H., and Gustavson, D. H. (1975). Group Techniques for Program Planning: A Guide to Nominal and Group Delphi Processes. Glenview, IL: Scott Foresman.

Dempsey, B. J. (1985). An Update on the Organization and Administration of Learning Assistance Programs in U. S. Senior Institutions of Higher Education. (Eric Reproduction Services No. ED 257334).

Devirian, M. C., Enright, G., and Smith, G. D. (1975). A Survey of Learning Program Centers in U. S. Institutions of Higher Education. In College Learning Skills Today and Tomorrowland: Proceedings of the Eighth Annual Conference of Western College Reading Association.

Dey, E. L., A. W. Astin and W. S. Korn. (1991). The American Freshman Twenty-Five Year Trends, 1966-1990. Los Angeles, CA: Higher Education Research Institute, Graduate School of Education, University of California.

Ellison, J. (1973). The Concept of College and University Learning Resource Centers. (ERIC Reproduction Services No. 077 229.

Ellison, J. (1970). Lane Community College Study Skills Center. Western College Reading Association Newsletter, Spring.

Enright, G. (1975). College Learning Skills: Frontierland Origins of the Learning Assistance Center. In College Learning Skills Today and Tomorrowland. Proceedings of the Eighth Annual Conference of Western College Reading Association.

Enright, G. and G. Kirsteins. (1980). The Learning Center: Toward an Expanded Role. In New Directions for College Learning Assistance, ed. Oscar T. Lenning and Robbie L Nayman. San Francisco, CA: Jossey-Bass Inc.

Enzer, S. (1969). A Case Study Using Forecasting as a Decision-Making Aid. Madison, WI: The Institute for the Future.

Erdos, P. L. (1983). Professional Mail Surveys. Malabar, Fl: Robert E. Krieger Publishing Company.

Ezell, A. S. and J. K. Rogers. (1978). Futuring Technologies in Education: Delphi Technique. College Student Journal, XIII, 122-126.

Gordon, T. J. and R. H. Ament. (1969). Forecasts of Some Technological and Scientific Developments and Their Societal Consequences. Middletown, NJ: Institute for the Future.

Gunselman, M. (Ed.). (1971). What Are We Learning about Learning Centers? Oklahoma City. OK: Eagle Media.

Harman, A. J. (1975). Collecting and Analyzing Expert Group Judgment Data. Santa Monica, CA: Rand Corporation.

Hartman, A. (1981). Reaching Consensus using the Delphi Technique. Educational Leadership, 38, 495-497.

Haynes, C. A. (1989). A Study of Learning Centers in Southeastern Two-Year and Four-Year Public and Private Colleges and Universities. (Unpub. Ed.D. dissertation, University of Tennessee, Knoxville.

Helmer, O. (1967, March). Analysis of the Future: The Delphi Method. Santa Monica, CA: Rand Corporation.

Hencley, S. P. and J. R. Yates. (1974). Futurism in Education. Berkeley, CA: McCutrhan Publishing Corporation.

Hodgkinsons, H. L. (1983). Guess who's coming to college: Your students in 1990. National Institute of Independent Colleges and Universities. (Eric Reproductive Services ED 234 882).

Hopkins, C. O., K. L. Ritter, and W. L. Stevenson. (1972). Delphi: A planning tool, report of a study conducted by the Division on Research, Planning and Education. Presented to Oklahoma State Department of Vocational and Technical Education, Stillwater, Oklahoma.

Jones, D. J., and B. C. Watson. (1990). High-risk Students and Higher Education: Future Trends. ASHE-ERIC Higher Education Report No. 3, Washington, DC: The George Washington University, School of Education and Human Development.

Jones, H., and H. Richards-Smith. (1987). Historically black colleges and universities: A force in developmental education. Research in Developmental Education, 4, (5), 1-3.

Judd, R. C. (1972). Use of Delphi Methods in Higher Education. Technological Forecasting and Social Change, 4, 173-186.

Kerr, C. (1964). The frantic race to remain contemporary. The Contemporary University: USA. Boston, MA: Beacon Press.

Kochenour, E. O. (1984). The Learning Center as Consultant to the Academic Community. (ERIC Reproduction Service No. ED 252 164.)

Lenning, O. T., and R. L. Nayman. (1980). The past, present, and future for learning centers. In Lenning and Nayman (Eds.), New Directions for Learning Centers. San Francisco, CA: Jossey-Bass.

Linstone, H. A. and M. Turoff. (Eds.). (1975). The Delphi Method: Techniques and Applications. Reading, MA: Addison-Wesley.

Long, H. B. (1991). Continuing higher education research futures: A Delphi study of Professors of Adult Education. Journal of Continuing Higher Education, 39, (2), 29-35.

Martin, D. C., M. Lorton, R. Blanc., and C. Evans. (1977). The Learning Center: A Comprehensive Model for Colleges and Universities. Grand Rapids: Central Trade Plant.

Materniak, G. and A. Williams. (1987). CAS Standards and Guidelines for Learning Assistance Programs. Journal of Developmental Education, 11 (1) 12-18.

Maxwell, Martha. (1980). Improving Student Learning Skills. San Francisco, CA: Jossey-Bass Inc.

Mayhew, L. B., Ford, P. J., and D. L. Hubbard. (1990). The Quest for Quality: The Challenge for Undergraduate Education in the 1990s. San Francisco, CA: Jossey-Bass.

McGrath, E. J. (1971). The Learning Center in the Seventies. In M. Gunselman (Ed.), What Are We Learning About Learning Centers? Oklahoma City, OK: Eagle Media.

Miles, C. (1984). Developmental Education: Speculations on the Future. Journal of Developmental Education, 8 (1), 6-9.

Murray, J. V. (1968). The Development and Test of a Concept and Methodology for Long-range Forecasting. (Unpub. Ed.D. dissertation, University of Colorado.)

Peterson. G. (1975). The Learning Center. Hamden, CN: The Shoe String Press.

Phi Delta Kappa Commission on Schooling for the 21st Century. (1984). Handbook for Conducting Future Studies in Education. Bloomington, IN: Phi Delta Kappa.

Random House. (1991). Webster's College Dictionary. McGraw-Hill. New York, NY.

Rasp, A. (1973). Delphi: A Decision-maker's Dream. Nation's Schools, I, 29-32.

Raygor, A. L. (1965). Individualizing a College Reading Program. In Figueral, J. A. (Ed.) Reading and Inquiry. Proceedings of the International Reading Association Conference, 10, 168-170.

Roberts, G. H. (1986). Developmental Education: An Historical Study. (ERIC Document Reproduction Service No. ED 276395).

Robinson, F. P. (1970). Effective Study (fourth edition). New York, NY: Harper and Row.

Rosenbaum, J. (1983). Preparing college students for future careers in non-broadcast private telecommunications: A report on a national Delphi survey of professional video communicators. Dallas, TX: International Television Association.

Rouche, J. E. (April, 1984). Between a Rock and a Hard Place. Community and Junior College Journal, pp. 21-24.

Rouche, J. E. and J. J. Snow. (1977). Overcoming Student Learning Problems. Austin, TX: Sterling Swift.

Rouche, J. E. (1968). Salvage, Redirection, or Custody? Remedial Education in the Community Junior College. WA:

See, S. G. (1974). Implementing the Learning Resource Center. Who Where, How and With What? In G. Kerstiens (Ed.), Reading Update: Ideals to Reality. Proceedings of the Seventh Annual Conference of Western College Reading Association.

Siegel, S. (1956). Nonparametric Statistics. New York, NY: McGraw-Hill.

Smith, G. D., Enright, G., and Devirian, M. (1975). A National Survey of Learning and Study Skills Programs. In G. McNinch and W. D. Miller (Eds.), Reading Convention and Inquiry: Twenty-Fourth Yearbook of the National Reading Conference. National Reading Conference.

Sullivan, L. L. (1980). Growth and Influence of the Learning Center Movement. In K. Lauridsens (Ed.) Examining the Scope of Learning Centers. San Francisco, CA:d Jossey-Bass.

Sullivan, L. L. (1979). Sullivan's Guide to Learning Centers in Higher Education. Portsmouth, NH: Entelek.

Thum, C. P. (1980). Learning Centers in Institutions of Higher Education: An Analysis. (Unpub. Ed.D. dissertation, Cornell University.)

Tiedemann, D. A. (1985). Media Services in Higher Education: A Delphi Study for the 1990's. (Unpub. Ed.D. dissertation, University of San Diego.)

Toeffler, A. (Ed.). (1974). Learning for Tomorrow: The Role of the Future in Education. New York, NY: Vintage Books.

Tomlinson, L. M. (1989). Postsecondary Developmental Programs: A Traditional Agenda with New Imperatives. Report No. 3. Washington, DC: School of Education and Human Development, The George Washington University.

Uhl, N. P. (1983). Using the Delphi Technique in Institutional Planning. New Directions for Institutional Research, 37, San Francisco, CA: Jossey-Bass, Inc.

Van, B. (1990). The Application of Essential Developmental Education Principals by Program Administrators. (Unpub. Ed.D. dissertation, University of Connecticut.)

Vela, N. (1989). A Delphi Study of California Community College Counselors' Responsibilities and Competencies for the 1990's as Perceived by Chief Student Services Administrators. (Unpub. Ed.D. dissertation, University of San Diego.)

Weaver, W. T. (1971). Delphi Forecasting Method. Phi Delta Kappan, I, 267-71.

APPENDIXES

APPENDIX A

REQUEST FOR NOMINATIONS

NOMINATION FORM

NOMINATION FORM

NAME_____

ADDRESS_____

_____

_____

PHONE_____
(if known)

NAME_____

ADDRESS_____

_____

_____

PHONE_____
(if known)

NAME_____

ADDRESS_____

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PHONE_____
(if known)

NAME_____

ADDRESS_____

_____

_____

PHONE_____
(if known)

NAME_____

ADDRESS_____

_____

_____

PHONE_____
(if known)

__ Yes, I would like to receive a copy of the summary report.

Missouri Southern State College

January 23, 1992

&title& &fname& &lname&
&dept/o&
&school&
&city&

Dear &title& &lname&:

I am a Counselor in the Learning Center at Missouri Southern State College. The Center has been in existence for seven years, and like many learning centers, is currently in the process of planning for the next century.

As a doctoral candidate in Adult Education at Oklahoma State University, I am conducting research to project the future of college learning assistance centers. I hope to identify twenty experts in the field who can develop a consensus as to what services learning centers will provide in the next decade.

As a officer in &group&, your participation in identifying these experts is essential to the success of my research. I have enclosed a form on which you may nominate three to five people whom you consider to be leaders in the development of learning assistance centers. Please complete and return this form by February 10.

I would be happy to provide you with a summary of the results of this study. If you would like to receive a copy, please check the request on the nomination form, and return the enclosed mailing label. To assure anonymity, the mailing label will be separated from your nominations when they are received.

Thank you in advance for your help with this project. If you have any questions, please do not hesitate to contact me.

Sincerely,

Eillen Godsey
Learning Center Counselor
Missouri Southern State College
Joplin, Missouri 64801-1595
Phone (417) 625-9670
Fax (417) 625-9734

Missouri Southern State College

February 21, 1992

&title& &fname& &lname&
&dept/o&
&school/o&
&address/o&
&city&

Dear &title& &lname&:

I am a Counselor in the Learning Center at Missouri Southern State College, and a doctoral candidate in Adult Education at Oklahoma State University. I am currently conducting research to project the future of college learning assistance centers which will attempt to develop a consensus among experts as to what services learning centers should provide in the next decade.

Through a survey of the officers of &group&, you were nominated as an expert in the learning assistance field. Because of your expertise, I am asking for your participation in this study. The study will be conducted as a three probe Delphi to identify the goals for learning assistance centers in the next ten years. Each probe will require about fifteen minutes of your time.

Please return the enclosed post card indicating your willingness to participate in this study. The Delphi process preserves confidentiality; therefore, names will be not used in tabulations. If you are able to participate, the first forms will be sent to you without delay. I expect all the probes to be completed by May 15, 1992.

Thank you in advance for your help with this research. If you have any questions, please do not hesitate to contact me.

Sincerely,

Eillen Godsey
Learning Center Counselor
Missouri Southern State College
Joplin, Missouri 64801-1595
Phone (417) 625-9670
Fax (417) 625-9734

APPENDIX B

REQUEST TO PARTICIPATE

RESPONSE CARD

Eillen Godsey
Learning Center
Missouri Southern State College
Joplin, MO 64801-1595

____ Yes, I will be able to participate in your study.

____ No, I will not be able to participate in your study.

Signed: _____

APPENDIX C

STATES REPRESENTED IN STUDY

AND PANEL MEMBERS

States Represented in the Study

Alaska	New Jersey
Arizona	New Mexico
Illinois	North Carolina
Iowa	Ohio
Kentucky	Oregon
Maryland	South Carolina
Minnesota	Texas
Missouri	Virginia
Nebraska	

PANEL MEMBERS

INSTITUTION TYPE	NO. OF STUDENTS	YEARS OF EXPERIENCE LEARNING ASSIST.
Two-Year/Public	1,000	20
Two-Year/Public	45,000	11
Two-Year/Public	35,000	23
Two-Year/Public	2,300	15
Two-Year/Private	*	*
Two-Year/Private	*	*
Four-Year/Private	700	9
Five-Year+/Private	12,000	11
Five-Year+/Public	10,000	*
Five-Year+/Public	25,000	20
Five-Year+/Public	10,000	18
Five-Year+/Public	12,000	10
Five-Year+/Public	22,000	18
Five-Year+/Public	13,000	8
Five-Year+/Public	12,000	10
Five-Year+/Public	23,000	17
Five-Year+/Public	40,000	10
Five-Year+/Public	35,000	49
Five-Year+/Public	14,000	20
Five-Year+/Public	18,000	25
Five-Year+/Public	30,000	20

* Answer Unknown

APPENDIX D

DELPHI I COVER LETTER

INSTRUMENT

Missouri Southern State College

March 6, 1992

&title& &fname& &lname&
&dept/o&
&school/o&
&address/o&
&city&

Dear &title& &lname&:

Thank you for consenting to participate in research on the future of learning assistance services. You are among twenty-one experts in the learning assistance field who will be providing valuable information by identifying services that centers should provide by the year 2002.

The first of three probes to identify these services is enclosed. Upon completion, return the instrument in the enclosed self-addressed, stamped envelope by Monday, March 16.

As soon as the results of this first round have been tabulated, you will receive the analysis and have the opportunity to express your opinion once again for further clarification. As mentioned in the first letter, the Delphi process preserves confidentiality; therefore names will not be used in tabulations.

Thank you again for your valuable time. If you have any questions, please do not hesitate to contact me.

Sincerely,

Eillen Godsey
Learning Center Counselor
Missouri Southern State College
Joplin, Missouri 64801-1595
Phone (417) 625-9670
Fax (417) 625-9734

APPENDIX E

REVIEW PANEL MEMBERS AND TOTAL

RESPONSES FROM DELPHI I

REVIEW PANEL

Mrs. Myrna Dolence, Director
Learning Assistance Center
Missouri Southern State College

Dr. Elaine Freeman, Director
Retention and Special Programs
Missouri Southern State College

Dr. Delores Honey, Director
Assessment and Institutional Research
Missouri Southern State College

Eilleen Godsey
Learning Center Counselor
Missouri Southern State College
Joplin, MO 64801-1595
(417) 623-2384

DELPHI I

Name _____

(Your name is needed so you may see how you compare with the rest of the group as we proceed with round II.)

Directions: Please answer the following question with brief and concise statements. Feel free to use additional pages and include as many responses as you feel necessary.

BASED ON CURRENT TRENDS, WHAT ARE YOUR PROJECTIONS REGARDING THE SERVICES THAT SHOULD BE OFFERED BY COLLEGE LEARNING ASSISTANCE CENTERS BY THE YEAR 2002?

Please be specific in listing these services.

Total Delphi I Responses

Critical thinking skills
Standardized test preparation
Math and Science study skills services
Academic skills programs for returning students
Support services for international students including vocabulary development, technical reading skills and conversation labs.
Freshmen orientation courses.
Study skills such as notetaking, time management, memory and concentration, test preparation & test taking, speed reading.
Study skills assistance for students with learning disabilities
Test accomodation services
Academic support programs for students on probation.
Stress management.
Learning assistance for transfer students.
Writing skills for graduate students.
Workshops on how to use specific computer programs.
Adjunct classes including training tutors.
Tutorial services to graduate students, how to survive a thesis or dissertation, preparing for orals.
Assistance to graduate students on time management.
Computer research skills.
Instruction on accessing computer texts.
Assistance in forming study groups and coalitions.
Developing partnerships with businesses to provide learning assistance.
Presenting workships to faculty on how to help students learn.
Joint academic support programs with specific units or groups on campus.
Outreach services to dorms and campus groups.
Outreach to public school personnel on how to help students develop study skills.
International exchanges to work with professionals from other countries in the area of learning assistance.
Academic advising.
Academic evaluation/diagnostic testing
Community outreach
College preparatory programs
Computer assisted instruction
Counseling
Coursework in Math, Reading, writing and study strategies. with and without credit
Disabled student assistance programs
ESL/Bilingual/second dialect assistance
Faculty development workshops
Learning assistance for special programs e.g. Athletes, Health professions,. . .
Math anxiety assistance
Math resource center
Mentoring
Monitoring student progress
New student academic orientation
Peer tutoring

Preparatıon for professsıonal tests
Professıonal tutorıng
Scıence anxıety assıstance
Student potentıal program
Study groups
Study skılls
Summer prepatory programs
Supplemental Instructıon
Test anxıety
Test preparatıon
Traınıng academıc advısors
tutor traınıng
Wrıtıng anxıety assıstance
Wrıting center
Educational exchanges to promote ınternatıonal access and scholorshıp
ınstructıon to promote global vıew of the world
provısıon of Englısh as a foreıgn language ın the U.S., and abroad as the "lıngua Franca" of the global village
Computerızed dıagnostic testıng (adaptıve testıng)
Computer-based ındıvıdualızed ınstructıonal supplement actıvıtıes
Learnıng styles assessment
Crıtical thınking development (possıbly computerızed)
ESL support
Academıc counseling (learnıng counselıng)
Faculty development actıvıtıes
Honors program actıvıtıes
GRE, LSAT, MCAT and other graduate entry test proparatıon
Short-term workshops on note-takıng, study skılls, test-takıng, etc. for college students
Short-term skılls development actıvıtıes for hıgh school students who have expressed an ınterest ın attendıng the ınstıtutıon at whıch the center ıs housed.
Telecommunıcatıons-based dıstance learnıng actıvıtıes ın support of ındıvıdual/ındependent study.
Provıdıng academıc support for students who are havıng academıc dıfficulty
Tıme management
Basıc study skılls
Word processıng assıstance
Subject matter tutorıng
Supplemental Instructıon
Sıagnosıs of student academıc dıfficultıes
ıncreased servıces for learnıng dısabled
ESL servıces
Increased focus on helpıng all students of become better students.
Emphasıs on prevention:
  Makıng study skılls ınformatıons avaılable to all students
  "Packagıng" ıt so ıt ıs read
  Encouragıng students to apply the ınformatıon
Servıces to student groups ın resıdence halls
Servıces to students ın classroom settıngs
Helpıng faculty to provıde study skıll ınformatıon to theır students
Faculty development actıvıtıes

Consultant services on integrating study strategies and critical thinking skills into conternt areas to frofessional/technical faculty as well ato high school staff.
Preparatory coursework for students not ready to enter college curricula.
Services to all levels of classes from tutorial to developmental and transfer.
Supportive services for applied academics and tech/prep associate degrees.
Direct services to students
Supportive services to faculty and staff.
Coordinate services for students with disabilities.
Provide assistive technology for the disabled.
Provide bridge programs for underprepared students.
Certification services for tutor training and staff development.
Provide brochures and general information on study skills.
Tutoring
CAI
Learning/study skills workshops
Math anxiety workshops
Academic services to the learning disabled
Diagnostic services for the learning disabled
Faculty and Staff development.
Math and Writing labs
Student assessment and placement for the entire campus.
Open entry/open exit classes in basic skills
Distance learning in English and math.
Provide student development services
Individualized instruction
Diagnosis for individual learning problems
Learning counseling
Computer managed inprovement programs
Supplemental instruction for high risk classes
Tutor training
Faculty development for instructional improvement
Research with faculty on teaching and learning at the college level.
College reading strategies for specific coursework.
College writing strategies
College test taking strategies
Technology strategy skills
Self-assessment strategies
Academic advisement
Counseling Services
Advocate services
Workshops across campus
Supplemental instruction
Tutoring
Campus-wide tutorial program
Academic and personal counseling
Assessment and placement of all students
Developmental courses in reading, study skills, grammar , writing, math, science, etc.
Writing lab
Math lab

All labs will use computer technology
Direct services for learning disabled students
Direct services for ESL students
Services for adult learners
Learning styles information
Supplemental instruction
Freshmen year experience
Computer aided instruction
Discipline-based reading, writing and language skills courses.
Faculty and staff development
Specialized services for returning adult learners
Basic cognitive skills instruction at several levels
Instruction in study skills
Instruction in thinking skills
Instruction in basic science
Student assessment
Tutoring
Career planning
Seminars in teaching/learning improvement
Outreach services to business and industry
Outreach services to public schools
CAI
Word processing
Campus-wide tutoring
Provide wide range of resources for students
Counseling
Study skills/learning skills workshops
Support group
Quiet study areas
Group work/study areas
Subject specific labs
Assessment for all entering students to determine placement
Orientation courses
Remedial classes
Campus-wide tutoring services
Special assistance for international students
ESL
Outreach to teacher training programs
Faculty development programs
Counseling
Tutoring
Collaborative learning groups
Remedial coursework in reading, composition, math and science.
Success in study strategies woekshops
Accomodations for learning disabled students
ESL services
Remedial and developmental math, writing, reading and study strategies
ABE/GED instruction
Expanded services in evenings and weekends both on and off campus
Academic assessment
Academic advisement
Will serve as umbrella for variety of services
Assistance in developing basic skills

Study skills with heavy emphasis on learning how to learn
Collaborative learning groups
Learning styles assessment and training
Test taking skills
Assessment and placement tests
Critical thinking skills training
Provide developmental classes with flexibility
Tutoring
Math lab
Writing lab
Reading lab
Multi-media services
CAI
Counseling
Learning styles training
Supplemental instruction
Bridge courses
Study skills courses for all students
Learning skills workshops
Supplemental instruction
Computer mediated learning assistance from A to Z
Faculty development
Tutoring
Learning strategies courses and workshops
Supplemental instruction
Tutoring
Computerized assessment/placement tests
Counseling
Resource lab for course support
Learning styles analysis

APPENDIX F

DELPHI II COVER LETTER INSTRUMENT

Missouri Southern State College

May 15, 1992

&title& &fname& &lname&
&dept/o&
&school/o&
&address/o&
&city&

Dear &title& &lname&:

Thank you once again for your participation in this research on the future of learning assistance services. The response has been exceptional, and I truly appreciate your input and ideas.

I received 224 statements concerning the question "Based on current trends, what are your projections regarding the services that should be offered by college learning assistance centers by the year 2002?" Through a systematic group process, the 224 statements were placed into 47 categories of like responses. These 47 categories make up the second Delphi probe.

To further refine the services that should be offered by a college learning assistance center, I am asking you to please complete the enclosed probe. Specifically, I ask that you: (1) indicate the 20 most important services by placing a checkmark in the first blank, (2) rank the 20 you have selected using numerals 1 through 20 in the second blank with one (1) as the most important. Feel free to add new services or make comments.

Please return the instrument by June 8 so it can be analyzed. Again, thank you for your assistance.

Sincerely,

Eillen Godsey
Learning Center Counselor
Missouri Southern State College
Joplin, Missouri 64801-1595
Phone (417) 625-9670
Fax (417) 625-9734

Enclosures

DELPHI II

Name_____

INSTRUCTIONS: Please review each of the 47 services identified in Questionnaire No. 1. Each is a service identified as one that should be offered by learning assistance centers by the year 2002. The statements have been randomly placed for you to:

1. Indicate the 20 most important services by placing a check mark in the first blank.
2. Rank the 20 you have selected using numerals 1-20 in the second blank, with (1) as the most important.
3. Feel free to add new services or make comments.

SERVICES THAT SHOULD BE OFFERED BY LEARNING ASSISTANCE CENTERS BY THE YEAR 2002.

Best Items	Rank of Selected Items	
____	____	1. ABE/GED instruction.
____	____	2. Career planning.
____	____	3. Academic evaluation/diagnostic testing.
____	____	4. Certification services for tutor training and staff development.
____	____	5. Academic advising.
____	____	6. Advocate services/mentoring.
____	____	7. Collaborative/cooperative learning groups.
____	____	8. Bridge programs for underprepared students.
____	____	9. Assistance to grad students e.g. thesis/dissertation/orals.
____	____	10. Math resource center.
____	____	11. Honors program activities.
____	____	12. Faculty/staff development workshops.

____	____	13. Outreach to teacher training programs.
____	____	14. Stress/anxiety management e.g. math, writing, science, testing...
____	____	15. College preparatory coursework.
____	____	16. Develop partnerships with business.
____	____	17. Counseling.
____	____	18. Research with faculty on teaching and learning at the college level.
____	____	19. Multi-media services.
____	____	20. Disabled student assistance programs.
____	____	21. Outreach to public school personnel.
____	____	22. Computer assisted instruction.
____	____	23. Learning styles assessment and training.
____	____	24. Provide group work/study areas.
____	____	25. Freshman year experience.
____	____	26. Academic support program with specific groups on campus e.g. adults/probation/minority...
____	____	27. Computer research skills training.
____	____	28. Tutor training.
____	____	29. Promotion and packaging of study strategies and prevention information.
____	____	30. Open entry/open exit classes in basic skills.
____	____	31. Expanded evening and weekend services--on and off campus.
____	____	32. Computer software workshops.
____	____	33. Learning strategies courses and workshops.
____	____	34. ESL/Bilingual/second dialect assistance.
____	____	35. Critical thinking skills development.
____	____	36. New student academic orientation/courses.

____	____	37. Outreach services to dorms and campus groups.
____	____	38. Peer/professional tutoring.
____	____	39. Standardized test preparation e.g. ACT, GRE, LSAT, MCAT ...
____	____	40. Student development services e.g. self assessment, student potential.
____	____	41. Instruction to promote global view of the world.
____	____	42. Writing center.
____	____	43. Student assessment and placement for the entire campus.
____	____	44. Supplemental Instruction.
____	____	45. Telecommunications-based distance learning activities in support of individual/ independent study.
____	____	46. Educational exchanges to promote international access and scholarship.
____	____	47. Test accommodation services.

Additions or Comments:

APPENDIX G

DELPHI III COVER LETTER INSTRUMENT

Missouri Southern State College

July 9, 1992

&title& &fname& &lname&
&dept/o&
&school/o&
&address/o&
&city&

Dear &title& &lname&:

Your responses to the second Delphi probe, which asked you to rank the twenty most important services, have been tabulated. The response for this study has been exceptional and I thank you for your participation and support.

In the third and final probe, please examine the twenty services that the panel has identified. Each service has been listed in the rank order of the responses to Delphi II, along with the number of ranking points received. A point system (twenty points for a ranking of "1", nineteen points for a ranking of "2" etc.) was used to calculate the rankings. There was a tie for thirteenth place, in which the service that received the most votes from the panel was ranked higher.

To complete the probe, please compare the services with your Delphi II response and determine if you still agree or if you want to make a change. Rank the twenty services from one to twenty by assigning "1" as the most important and so on. Space has been provided for you to justify your choices and make comments about the service selection.

In addition to the Delphi probe, I have included a short demographic questionnaire. Please complete this and return it with the Delphi probe in the self-addressed, stamped envelope I have enclosed.

Please return the instrument and the demographic questionnaire by Friday, July 24, so final analysis may begin. Again, thank you for your assistance.

Sincerely,

Eillen Godsey
Learning Center Counselor
Missouri Southern State College
Joplin, Missouri 64801-1595
Phone (417) 625-9670
Fax (417) 625-9734

DELPHI III

Name_____

INSTRUCTIONS: These 20 services that should be offered in learning assistance centers in the year 2002 appear in the order of ranking as a result of your responses to Delphi II. The number of points accumulated in that ranking appear beside each criteria, along with the rank you assigned in Delphi II. You are asked to determine if you still agree with your choice, or do you wish to make a change. Please justify your choices and rank these 20 services by placing a "1" in the blank in front of the service you feel is the most important, a "2" for the second, etc.

YOUR FINAL VOTE	DELPHI II RESULTS	YOUR II RANK	SERVICES (IN ORDER OF RANK)
_____	238	_____	1. Academic evaluation/diagnostic testing.
_____	233	_____	2. Learning strategies courses and workshops.
_____	221	_____	3. Tutor training.
_____	220	_____	4. Bridge programs for underprepared students.
_____	208	_____	5. Writing center.
_____	194	_____	6. Supplemental Instruction.
_____	179	_____	7. Peer/professional tutoring.
_____	169	_____	8. Critical thinking skills development.
_____	168	_____	9. College preparatory coursework.
_____	155	_____	10. Math resource center.
_____	142	_____	11. Collaborative/cooperative learning groups.
_____	141	_____	12. New student academic orientation/courses.
_____	128	_____	13. Certification services for tutor training and staff development.
_____	128	_____	14. Promotion and packaging of study strategies and prevention information.

YOUR FINAL VOTE	DELPHI II RESULTS	YOUR II RANK	
____	117	____	15. Research with faculty on teaching and learning at the college level.
____	115	____	16. Faculty/staff development workshops.
____	105	____	17. Stress/anxiety management e.g. math, writing, science, testing...
____	103	____	18. Academic support program with specific groups on campus e.g. adults/probation/ minority...
____	96	____	19. Student assessment and placement for the entire campus.
____	94	____	20. Academic advising.

VITA

Eillen A. Godsey

Candidate for the Degree of

Doctor of Education

Thesis: A DELPHI STUDY OF THE FUTURE SERVICES OF LEARNING CENTERS IN THE UNITED STATES

Major: Occupational and Adult Education

Biographical:

Personal Data: Born in Vandalia, Illinois, February 5, 1949, the daughter of Bernard and Lila C. Goodson.

Education: Graduated from Belen High School, Belen, Mexico, in 1967; received Bachelor of Arts degree from East Texas State University in May, 1975; received Master of Science degree from East Texas University in July, 1976; received Education Specialist degree from Pittsburg State University in July, 1989; completed requirements for the Doctor of Education degree at Oklahoma State University in December, 1992.

Professional Experience: Graduate Assistant, East Texas State University, 1975-1976; Director of Student Activities, Crowder College, 1976-1981; Registrar, Crowder College, 1981-1982; Program Director, Ozark Gateway Council of Governments, 1983-1984; Learning Center Counselor, Missouri Southern State College, 1984-Present.

Professional Organizations: Phi Kappa Phi, Kappa Delta Phi, National Association of Developmental Educators, Midwest College Learning Center Association, Midwest Regional Association of Developmental Educators, Learning Styles Network.