1-1-1984

A study to evaluate a program for the assessment of career, personal, and study skills of North Shore Community College students.

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A STUDY TO EVALUATE A PROGRAM FOR THE ASSESSMENT OF CAREER, PERSONAL, AND STUDY SKILLS OF NORTH SHORE COMMUNITY COLLEGE STUDENTS

A Dissertation Presented

by

Alegría L. Montero

Submitted to the Graduate School of the
University of Massachusetts in partial fulfillment
of the requirements for the degree of

DOCTOR OF EDUCATION

September 1984

Education

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ACKNOWLEDGEMENTS

My sincere thanks are expressed to Dr. Charlotte Rahaim, who had the vision and the courage to develop the field-based program for community college personnel. Without such a program, this work would not have been undertaken. Without her guidance, resourcefulness, and gentle prodding, it would not have been completed.

To Dr. Harvey Scribner, whose kindness, support, and integrity provided true leadership, gratitude is extended for being my chairperson and for his direction in conceptualizing and completing the project.

Sincere appreciation is extended to Dr. William Field, for his time, his encouragement, and his valuable input.

There were many who offered encouragement and assistance throughout the study; among these were Coral Nicholas, John O'Donnell, Lou Procopio, John White, Cindy Negrotti, and Jackie DeLorenzo -- to all, my sincere thanks.

Finally, love and thanks go to my husband, Melvin, and to my family, for instilling in me the belief that all this was possible, and for providing the support to make it happen.

Abstract

A Study to Evaluate a Program for the Assessment of Career, Personal, and Study Skills of North Shore Community College Students

September, 1984

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The purpose of this study was to evaluate a program designed to assess the career, personal, and study skills needs levels and to provide individual recommendations to North Shore Community College students. In this program, students receive scores on the Career, Personal, and Study Skills Inventory (CPASI), which addresses the following areas: 1) career development, 2) decision making, 3) stress management, 4) self awareness, 5) interpersonal communications, and 6) reading and study skills. An additional goal of the study was to learn more about the needs of community college students.

During the 1982 freshman Assessment/Orientation/ Registration program, 206 experimental students

participated in the program utilizing the CPASI, while 91 control students were given a traditional group explanation of support services and courses. After completing one semester of college, experimental students were invited for a retesting of the CPASI and a structured interview; control students received a mailed questionnaire. The following outcome variables were examined: grade point averages, credits completed, use of support services, and enrollment in personal and study skills development courses.

The results of the study were mixed. Students participating in the assessment program used more services and were more likely to persist through two semesters in college, regardless of their grade point averages, although they did not enroll in more personal development courses nor have significantly higher grade point averages. The results showed a high correlation of need levels measured by the CPASI and self ratings in the areas of career development, stress management, and reading and study skills. The areas of highest need, regardless of age, sex, and type of program were career development and reading and study skills. Students enrolled in transfer programs, younger students, and males tended to have lower grade point averages than other students.

Recommendations were made for further research regarding the validity and reliability of the CPASI, for improving the assessment program, and for identifying and addressing programs to high risk students. Finally, implications for use of the program at other community colleges were discussed.

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CHAPTER I

INTRODUCTION

Background

In 1976, with the aid of federal funding, North Shore Community College in Beverly, Massachusetts launched the five-year Advanced Institutional Development Program (AIDP), which addressed the following three areas: Academic Development, Student Development, and Institutional Development. The AIDP proposal cited a study entitled "Academic Preparation: An Assessment of Student Needs at North Shore Community College," by six members of the faculty, which concluded that not nearly enough was known about the college's students. The study pointed to: (a) an extremely wide spread in students' academic preparation and capability, (b) the need for additional assessment of skill levels, and (c) the desirability of a skill-building program based on needs identified through the assessment program (North Shore Community College, 1976).

The Student Development component of the program was to address these needs, reflecting a developmental education philosophy, which states:

> All education is developmental; that is, the educational process is designed to promote individual growth. Therefore, the process of goal attainment must:
> 1. Involve the identification of the necessary competencies for successful goal attainment;
> 2. Provide a variety of modes for such attainment;
> 3. Determine means for intermittent feedback of successful progression toward goal attainment. (German, 1978, p. 2)

The following components were considered essential to implementing a developmental education philosophy:

> 1. Student assessment should be initiated to determine the student's strengths and weaknesses. The assessment should include the determination of competence in three areas: academic skills, personal skills, and career goals.
> 2. Instructional and supportive services should be designed for inclusion in the student's learning plan which promote student mastery of the competencies necessary for goal attainment. (German, 1978, pp. 2-3)

North Shore Community College's post-admission Assessment/Orientation/Registration program is a direct outgrowth of this developmental educational philosophy and has been one of the major and lasting contributions of the Student Development component of the AIDP.

Overview of the Assessment/Orientation/Registration Program

The Assessment/Orientation/Registration program is based on the premise that, to maximize educational services for the college population, it is necessary to find out more about students' needs, interests, and abilities,

introducing students directly to the personnel and services offered by and at the college (German, 1978). It was considered both timely and efficient to accomplish this goal through a program linked to the registration procedure. Thus, an integrated Assessment/Orientation/Registration program has evolved during the past five years as a vehicle for implementing the developmental education philosophy of the college. The success of this program is dependent, to a large extent, on the ability of the three primary offices involved to develop their areas and to coordinate with the others. Although specific offices are identified as having the primary responsibility for each component of the program, all three must work closely together to insure a high quality experience for incoming students. Primary office responsibilities are as follows:

Assessment: Academic Skills Center and Counseling Center
Orientation: Counseling Center
Registration: Registrar's Office

Upon acceptance to the college, all full-time day students are scheduled to attend, by program of study, a full day's Assessment/Orientation/Registration program designed to prepare them to start school. Upon payment of a required admissions deposit, students are are mailed a basic outline of the program.

After arriving on their scheduled day, students are assigned to rooms in groups of 15 to 30, by program of

study. The entire morning is spent in Assessment, taking a battery of tests in English, mathematics, and career, personal and academic skills. Assessment in English is accomplished through the Reading Comprehension test of the Descriptive Tests of Language Skills, published by The College Board. Assessment of math skills is accomplished through the Computations test of the Comparative Guidance and Placement Program, published by American Mathematics Association. The career, personal, and study skills assessment, which is the focus of this study, utilizes a self-reporting, self-scoring objective inventory, the Career, Personal, and Academic Skills Inventory (CPASI), originally developed by the writer for use in this program. The CPASI was first developed in 1980 and has undergone two pilot studies and resulting revisions. See Appendix A for a detailed description of the CPASI's development.

After a lunch break, students reconvene in their groups for the Orientation session. This session is led by a team consisting of a counselor and a skills specialist. During Orientation, students receive the results of the academic assessment instruments from the skills specialist, and score their CPASI, assisted by the counselor. The counselor then interprets the results of the CPASI and introduces students to support services, academic policies and other basic information about the college. Then,

counselors and skills specialists assist students in building a schedule for their first semester, utilizing the Assessment results, program requirement sheets, and the Master Schedule. Finally, students attend Registration to complete the process.

This study will attempt to evaluate the career, personal, and study skills assessment component of the program, with special emphasis on the effectiveness of the CPASI instrument.

Purpose of the Study

1. To present a process for the implementation of the developmental educational philosophy in the community college through a comprehensive assessment program and the provision of instructional and supportive services to address the needs of a diverse student population.

2. To evaluate the career, personal, and study skills assessment component of the Assessment/Orientation/ Registration program at North Shore Community College.

3. To evaluate the effectiveness of the Career, Personal and Academic Skills Inventory (CPASI) instrument, in connecting students with appropriate courses and services at North Shore Community College and in improving academic performance.

Problem

The issue of identifying community college students' career, personal, and study skills needs and providing effective interventions to meet these needs will be the focus of this study. Toward this end, a model program using an instrument designed to assess these needs, the CPASI, will be evaluated. In effect, taking or not taking the CPASI will constitute the differing treatment between the experimental and the control groups.

More specifically, the questions to be asked include:

1. Are students taking the CPASI and receiving an interpretation and recommendations more likely to make use of support services and courses than students in a control group?

2. What is the relationship between taking the CPASI and academic achievement as measured by grade point average?

3. What is the relationship between taking the CPASI, completion of academic coursework over two semesters of college?

4. What is the relationship between need levels identified by an objective instrument (CPASI) and students' self ratings identified through direct questioning?

5. What are the changes in need levels experienced by a group of community college students after one semester of college, as measured by testing and retesting with the CPASI?

6. What is the relationship between need levels of community college students and demographic characteristics such as age, sex, and type of program of study (career or transfer)?

7. How do the need levels of students taking the CPASI and students in a control group, not taking the CPASI, compare after one semester of college?

8. What are the highest needs among community college students in the career, personal, and academic skills areas?

Design and Methodology

This study will be conducted using the experimental research method. This type of research investigates possible cause-and-effect relationships by exposing an experimental group to one or more treatment conditions and comparing the results to a control group not receiving the

treatment, or receiving a different treatment (Campbell & Stanley, 1966). For the purpose of this study, the treatment of the experimental group will consist of taking the CPASI, scoring the CPASI, and receiving specific recommendations based on the results. In contrast, the control group will receive a traditional explanation of personal development services and courses available at the college. Students will be assigned randomly to the experimental and control groups.

Experimental research was selected for the following reasons:

1. The experimental design is especially indicated if the purpose of the research is to find out how well a particular program achieves its goals (Weiss, 1972). This is precisely the objective of the present study.

2. The design of the Assessment/Orientation/ Registration program is such that the research conditions necessary for this type of study, such as the random assignment of students to the treatment groups, can be easily controlled.

3. The experimental approach is the most powerful because of the control it allows over relevant variables (Isaac & Michael, 1971). The drawbacks of this type of research, in terms of restrictiveness and artificiality, can be minimized in the present setting.

4. When decisions such as continuation or abandonment or change of a program, or to increase its usage, great confidence in the validity of the research is necessary. This is most probably obtained through use of the experimental design (Weiss, 1972).

Treatment

To implement the study, control and experimental samples from a population of incoming North Shore Community College students will be randomly selected. Both groups will be treated equally during the Assessment/Orientation/ Registration program, with the following exception: the control group will not take the CPASI, but will instead receive a traditional orientation to the college and an introduction to support services and personal development courses. The experimental group will take the CPASI and will receive recommendations based on the results. It is noted that, whereas in many studies an instrument is used for pre and post measures of outcomes, in the present study the experience of taking, scoring and receiving an interpretation of an instrument itself is a treatment under scrutiny. The outcome variables examined will be use of services and courses, grade point average, and completion of coursework. It will be hypothesized that those students receiving the treatment involving the CPASI instrument are

more likely to make use of appropriate courses and services which will result in improved academic performance and retention.

Follow-up

At the end of their first semester of college, experimental group students will retake the CPASI to determine possible changes in scores after one semester. On the same day, experimental group students will be interviewed using a structured format. The purpose of the structured interview is to compare need levels determined through direct questioning of students with those resulting from an objective instrument (CPASI). The interview will focus on students' opinions about the CPASI, their self ratings of need levels, and on their use of services and enrollment or planned enrollment in designated courses. The control group will be surveyed by mail at the end of one semester to determine self ratings need levels, and their use of services and enrollment or planned enrollment in designated courses. Participation in the follow up activities will be on a voluntary basis, and students will be assured of confidentiality and anonymity throughout the process.

The voluntary follow-up component poses a common methodological problem, that of subject mortality or

attrition. According to Gay (1976), subjects who drop out of a group may share a characteristic such that their absence has a significant effect on the results of the study. The effect of subject mortality is especially felt when much effort is required for participation, as is the case of experimental students in the present study. The effects of subject mortality, therefore, will be considered in the interpretation of results for the follow-up sample.

In addition to the data gathered directly from students, grade point averages, and information on completion of coursework and reenrollment for a second semester will be obtained from student records.

Conclusions will be drawn using descriptive and correlational statistical analysis of the data, and analysis of variance, utilizing the Interactive Data Analysis Package (IDAP). Finally, recommendations will be made regarding the personal, career, and study skills assessment program, the CPASI instrument, and possible applications to other community colleges.

Instrumentation

The study will utilize the following three instruments:

1. Career, Personal, and Academic Skills Inventory

(CPASI). This instrument will be given to experimental group students only, and its effectiveness in achieving the goals of the program will be a primary focus of the study.

2. Structured interview questionnaire for follow up of the experimental group students.

3. Questionnaire to be mailed to control group students.

The first of these instruments, the CPASI, was developed prior to the present study, and will be administered to experimental group students before and after their first semester of college. Appendix A contains a detailed explanation of the background, design, and pilot studies of the CPASI.

In choosing the instruments for the follow-up component of the study, the writer considered both the interview and the questionnaire. The interview is far more costly and time consuming than the questionnaire. While the interview provides for a flexible atmosphere, and allows for greater depth than the questionnaire, the rapport established between the interviewer and the subject may bias the responses. Also, the adaptability which is a part of the interpersonal situation may lead to subjectivity (Borg, 1963). Other factors which might bias data obtained through an interview include (1) the respondent's eagerness to please the interviewer, (2) a

vague antagonism that sometimes arises between the interviewer and respondent, and (3) the tendency of the interviewer to seek out answers that support his/her preconceived notions (Borg, 1963).

The mailed questionnaire, on the other hand, is efficient and practical, with a minimum of subjectivity involved since the same instructions are given to all subjects (Ary et al., 1972). There are several disadvantages to the mailed questionnaire, however: (1) the questions could be misinterpreted by the subject; (2) questions could be omitted which might add to the interpretation of others; (3) the questionnaire format might be shallow in the quality of information in comparison to the interview format, and finally, (4) a mailed questionnaire may yield a low and possibly biased return (Good, 1963).

Studies have found that respondents are fairly consistent when the interview and questionnaire responses to fact or "yes or no" items are compared (Jackson & Rothney, 1961; Walsh, 1968). Since the practical exigencies for the follow up of the experimental and control groups were different, the writer decided to develop a well-designed instrument that could be used with minor modifications in a structured interview format with experimental students and as a mailed questionnaire for

control students. The obvious disadvantage of this decision is that identical follow-up procedures will be not be followed for both groups. The reasons for the choice made were:

1) Experimental students will be asked to schedule an appointment for the CPASI retesting; using an interview to obtain students' self ratings will allow for the interviews to take place immediately following the retesting.

2) Both instruments will be designed to be very clear and specific. This will alleviate the pitfalls of ambiguity and misinterpretation of the questionnaire, and will minimize the need for subjective interpretation on the part of the interviewer.

3) To reduce interviewer bias, only professional, well-trained counselors will be used.

4) To secure an adequate response, follow-up reminders will be mailed to both groups.

Following is a description of each of the three instruments that will be employed in the study.

Career, Personal, and Academic Skills Inventory (CPASI)

The CPASI is a self-reporting and self-scoring objective inventory designed specificially to assess community college student needs in six areas. These areas were identified through the literature (Rehberg & Hotchkiss, 1972; Cross, 1968; Chickering, 1974; Alverno

College, 1974; Losak, 1973; McClain, 1979; Indrisano, 1977), previous need assessment efforts at North Shore Community College (1976, 1978, 1980), and two pilot studies of the CPASI. The areas addressed by the CPASI are:

1. Career awareness, planning, and decision making
2. Personal decision making and problem solving
3. Stress awareness and management
4. Self awareness and self concept
5. Interpersonal communications and relations
6. Reading and study skills

The CPASI consists of 50 descriptive self-statements with which the student is asked to agree or disagree. After completion, students score their inventories by following directions on a sheet attached to the inventory itself. Scores are obtained for each of the six scales measured by the instrument. A counselor then helps students interpret the results, using an accompanying Interpretation Guide.

The CPASI is administered during the Assessment/ Orientation/Registration program, along with standardized objective tests in English and mathematics. An objective inventory format was chosen over a questionnaire or a checklist for several reasons: (1) Other instruments used in the program were of the objective type; using a similar format would provide consistency, uniformity, and credibility to the personal development component of the program; (2) The susceptibility of objective instruments

for use with large groups; (3) The efficiency of objective instruments in terms of time, staffing, and cost; and (4) The adaptability of objective instruments to follow-up research studies.

The objective instrument, however, is not without drawbacks. Its tendency to be impersonal and not to allow for individual differences and interpretations are the primary limitations. When dealing with human subjects, the most direct approaches of gathering information should be employed. Whereas, more direct, individualized methods were considered, they were considered impractical for reasons of time, cost, and administration. Therefore, while realizing its shortcomings, an objective instrument was chosen over other alternatives. Careful attention to training of counselors in aspects relating to administration and interpretation of the instrument will be planned to reduce any undesirable aspects of this choice. In addition, the study will compare data obtained through an objective instrument with that obtained through direct questioning in a structured interview.

Students in the experimental group will first take the CPASI during the Assessment/Orientation/Registration program and again after completing one semester of college. For the retesting, students will receive a letter requesting voluntary participation in a study designed to

find out more about the needs of community college student. Students interested in participating will call the Counseling Center for an appointment.

Whereas during the first administration students will score the instrument and obtain their scores, the second administration will be scored by the writer for data collection purposes only.

Appendix A describes in detail the development and design of the CPASI; Appendix B contains the CPASI instrument.

Structured Inverview Questionnaire for the Experimental Group Students

This instrument will be used during the follow-up phase, along with the retesting of the CPASI. The interview format will consist of six sections:

Section 1 will include questions about the clarity, helpfulness, and comfort level of the CPASI.

Section 2 will ask students to rate their level of concern in the six areas addressed by the CPASI at present and, retrospectively, before school started.

Section 3 will provide an opportunity for students to mention other areas of perceived need, not addressed by the CPASI, with which they consider the college should be of assistance.

Section 4 will ask students about their use of support services and their satisfaction level with these services.

Section 5 will ask students about their enrollment or possible future enrollment in personal development and study skills courses.

Section 6 will ask students to try to remember their initial CPASI results, will ask if recommendations were followed, and reasons for their decision.

Whereas the research design precludes actual piloting of the structured interview format, feedback will be obtained from counselors and other student services personnel prior to its use. Appendix C contains the interview format.

Questionnaire for Control Group Students

The questionnaire to be used for the follow up of control students will be constructed to mirror the structured interview format used with experimental group students, where appropriate. This will allow for comparison of the responses of the two groups. (See Appendix D.)

The questionnaire will consist of four sections:

Section 1 will ask students to rate their level of concern in each of the designated six areas, at present and before school started (similar to section 2 of interview).

Section 2 will provide an opportunity for students to mention any other areas of perceived need with which they consider the college should be of assistance (similar to section 3 of interview).

Section 3 will ask students about their use of support services and their satisfaction level with these (similar to section 4 of interview).

Section 4 will ask students about their enrollment or possible future enrollment in personal development and study skills courses (similar to section 5 of interview).

Sample Selection

Identification of the Population

Regardless of the technique to be used in selecting a sample, the first step in sampling is defining the population, the group to which the results will be generalizable (Gay, 1976).

For the purpose of this study, the population is defined as incoming matriculated day students at North Shore Community College. Most of these students are

seeking full-time enrollment, that is, 12 or more semester credits, although a few may enroll in fewer than 12 credits. Students may or may not have had previous college experience. Those having prior experience would have done so through enrollment at another college or through the Division of Continuing Education (the evening division) at North Shore Community College.

The population is limited to community college students since the literature has demonstrated that students attending the community college have characteristics and needs different from those of students at other institutions of higher education (Cross, 1968, 1971). It focuses on incoming students rather than returning or continuing students because the writer considers that prior to the beginning of a college program is the most appropriate time to assess students' needs and to introduce them to services and programs addressing those needs. Also, incoming students constitute a "captive audience" in that they are scheduled to attend a full day's Assessment/Orientation/Registration program. North Shore Community College was selected because it is the only community college in the area that is using the CPASI to assess personal, career, and study skills needs of students. In addition, the design of the program at North Shore is easily adaptable to a research study. Although

one of the limitations of the study is the use of a sample drawn from only one college, it is considered that the various community colleges attract students with similar personal characteristics, the primary variations being due to geographical factors. Therefore, the writer anticipates that the results of this study may be generalizable to other similar community college populations.

Determination of Sample Size

The sample employed for this study will be selected from those students who participate in the Assessment/Orientation/Registration program during August, 1982. This period was selected because the majority of students planning to start in the Fall semester attend the August program. The largest possible experimental and control samples are desired. Since students in the control sample will be in a sense deprived from participating in part of the assessment program, the size of this sample will be limited to 100, or approximately one sixth of the anticipated 600 students participating in the program during the month of August. The experimental group, on the other hand, need not be limited, as there is no differential treatment for this group during the actual program. Members of this sample will be chosen from the assessment records stored at the college.

Another factor affecting sample size is that the attrition expected of the experimental group through the follow-up phrase is much larger than that expected for the control group. The primary reason for this is that the follow up activities for the experimental group involve scheduling an appointment for a retest and an interview. The follow up for the control group requires only the completion and return of a short mailed questionnaire. Thus, initial samples of 100 for the control group and 200 for the experimental group are planned.

Selection of Control Sample

A systematic sampling procedure will be followed to select the control sample rather than a pure random sampling procedure. This procedure involves selecting every Kth person, depending on the size of the population and the desired sample size (Gay, 1976). When students arrive at the Assessment/Orientation/Registration program, they are immediately assigned to specific rooms, according to program of study, and are administered the Assessment instruments. The CPASI is one of the instruments routinely administered; therefore the control sample will consist of students designated <u>not</u> to take the CPASI. The desired sample size is 100, approximately one sixth of the students participating in the program. Therefore, every sixth

student will be selected, upon arrival, and assigned to a room in which the CPASI will not be administered. This can be accomplished quite inconspicuously, since students expect to be assigned to different rooms and the pattern is difficult to detect.

Selection of Experimental Sample

The task of selecting the experimental group will be simpler, in that it will involve no special treatment during the actual Assessment program. Those students not selected for the control group will proceed through the regular program, which involves taking the CPASI. Their CPASI results will be placed in a testing folder which will be stored in the Academic Skills Center along with the results of the other tests. The desired initial sample is approximately 200. This will be identified by systematically selecting the appropriate proportion from among the folders of those students who actually took the CPASI, after the fact.

Hypotheses and Methods of Analysis

While using an experimental research design, the purpose of this study is primarily exploratory and descriptive. Therefore, the hypothesis testing procedure will assist in guiding the discussion, summarizing the results, and pointing to areas of interest for further study, rather than in drawing definitive conclusions.

Six hypotheses have been formulated to organize the study. These hypotheses are based on a review of the literature and the writer's predictions about the effects of the CPASI administration and interpretation on student awareness and resulting behavior. The study will additionally shed light on need levels of community college students in the six designated areas, and will study relationships between need levels and demographic characteristics of the research population. Following are the hypotheses, with their corresponding methods of analysis:

Hypothesis I. There will be a significant positive relation between taking the CPASI and participation in follow up activities (courses and services).

Method of analysis. Chi-square analysis.

Hypothesis II. There will be a significant difference in mean grade point averages between students taking (experimental) and those not taking (control) the CPASI.

Method of analysis. Analysis of variance.

Hypothesis III. There will be a significant positive relation between taking the CPASI and completion of college coursework.

Method of analysis. Chi-square analysis.

Hypothesis IV. There will be a significant positive relation between CPASI retest scores and interview scores.

Method of analysis. Correlation analysis.

Hypothesis V. There will be a significant change in need levels, as reflected by CPASI scores, over one semester of college.

Method of analysis. Paired t-test.

Hypothesis VI. There will be a significant difference in need levels between students taking the CPASI and students not taking it, after one semester of college.

Method of analysis. Two-sample t-test.

In addition, analysis of variance will be computed to determine the interaction of factors such as sex, age, and type of program of study with grade point averages, use of services and courses, and student retention. Further analysis will examine relationships between need levels and student characteristics, and will compare types and levels of needs demonstrated by students through an objective instrument and through direct questionning. The Interactive Data Analysis Package (IDAP) will be used for the analysis of data gathered from the various instruments and student records.

Delimitations

This study has the following limitations: First, it will be conducted at only one community college. This is the case because North Shore Community College is the only one in the geographical areas to have embarked in a comprehensive assessment program, including a personal, career, and study skills component. Second, the sampling procedures will adapt to the existing program. While an advantage of this method will be an inconspicuous data collection process, a resulting disadvantage will be that not all programs of study will be equally represented during the Assessment period chosen, August 1982. Most

notably, students from the Allied Health programs and those attending late registration in September will be absent from the study. Allied Health students will participate in a special program earlier in the summer and students attending late registration will receive an abbreviated version of the program due to time constraints. Thirdly, this study addresses only self-perceived need levels, which are affected by a number of variables concerning the nature of the program and students' priorities on a given day. From the students' perspective, the most important activity of the day is Registration rather than Assessment. This reality may adversely affect the validity of data collected on that day. Thus, the value of a retesting after a semester of college, when intervening variables can be limited. A fourth limitation is that this study professes only to review and evaluate one part of the Assessment program, that is, the career, personal and study skills component. The other component, which measures English and math skills, is and has been the subject of other studies, and will not be a primary focus of the present study.

Basic Assumptions

1. It is the mission of the community college to address not only academic subject areas but also the

career, personal, and study skills development needs of students.

2. Students are able to accurately self-report their career, personal, and study skills development levels. In effect, student needs exist only to the extent to which they are perceived by the students themselves.

3. Students entering a community college are concerned about thier career, personal, and study skills needs and, if provided the opportunity, will take advantage of courses and services available to meet these needs.

4. An appropriate time to assess student needs is prior to the beginning of their first semester, through an Assessment/Orientation/Registration program.

Definition of terms

1. Career and Personal Development: The acquisition of skills, insights, attitudes and behaviors that allow for defining and implementing strategies to accomplish short and long term career and personal growth goals.

2. Study Skills Development: The acquisition of basic skills and competencies that allow students to make progress in college courses and programs. These skills include reading, test preparation and taking, notetaking, and time management.

3. Assessment/Orientation/Registration Program: The one-day, post-admission program at North Shore Community College which includes an assessment of academic skills such as English and mathematics, an assessment of career, personal and study skills; an orientation to the college; and registration for first semester courses.

4. Assessment: The determination of skill levels in a number of areas related to success in college for the purpose of indicating appropriate points of entry to coursework in these areas.

5. Orientation: An introduction to basic information about the college, academic policies, and support services for students starting college. It also includes interpretation of Assessment data and assistance in selecting courses and building a schedule.

6. Registration: The procedure by which students sign up for courses for the following semester.

7. Counselor: A member of the Counseling Center whose job responsibilities include participation in the career, personal, and study skills Assessment program, coordination of the Orientation program, assisting students with Registration, providing comprehensive counseling services, and teaching personal development courses.

8. Skills Specialist: A member of the Academic Skills Center, whose job responsibilities include

coordination of the academic Assessment program, participation in the Orientation program, assisting students with Registration, providing comprehensive academic support services, and teaching academic skill building courses.

9. Personal development courses. A series of one-credit, 15 hour courses developed by the Student Services Division of North Shore Community College, integrating affective and cognitive learning in areas pertaining to career and emotional development.

10. Incoming students: Students that are attending North Shore Community College for the first time on a full-time day basis.

11. Returning students: Students that attended the day division of North Shore Community College during the semester immediately preceding the current semester.

C H A P T E R I I

REVIEW OF THE LITERATURE

Introduction

Although the two-year college has experienced an unprecedented growth pattern during the last two decades and shows promise of becoming the largest and most important segment of post-secondary education in the United States, in many respects it has been the least well-defined aspect of the total education system.

What is this entity called the "community college" or the "two-year college?" Why and when was it created and for whom? How has it evolved through the years, and why? Who are the students that attend the community college and why do they attend? Do these students have any special characteristics that distinguish them from students who attend the more traditional four-year institutions? What are the academic, career and personal needs of these students, and what attempts have been made to address these needs?

The purpose of this review of the literature is to provide the background for the present study. This will be accomplished by, first, tracing briefly the history and evolution of the community college. Secondly, the characteristics and needs of students will be discussed. Thirdly, developmental education models will be presented as the theoretical framework within which student needs can be addressed. Finally, a summary and analysis of the most noteworthy attempts to assess student needs and develop appropriate programs will be offered.

History, Evolution, and Philosophy of the Community College

Two-year colleges, in their various forms, evolved from both conservative and liberal educational thought during the nineteenth century. They developed from the efforts of university leaders who called for the reform of the American college. While considered liberal in the eyes of their contemporaries, these educators were striving for the establishment of upper-division and graduate education as the ideal of higher education, and conceived of the two-year college as a proper adjunct of secondary education (Eby, 1952). Heavily influenced by the European concept of highly selective and limited enrollment in advanced study, these leaders sought an educational outlet for those

secondary school graduates who were inadequately prepared for the rigorous demands of college study (Blocker, 1965). Increasing numbers of taxpayers were demanding that public institutions respond to a growing philosophy of education which stated that:

> The American way of life holds that all human beings are...entitled to equal opportunities to develop to their fullest capacities. The basic function of public education, then should be to provide educational opportunity by teaching whatever needs to be learned to whoever needs to learn it, whenever he needs to learn it. (Board of Education, Joliet, Ill., 1950)

Although the actual beginnings of the two-year college movement can be traced to private academies offering elementary, secondary, and collegiate courses during the period of 1835 to 1900 (Parker, 1970), the better-known publicly-supported two-year colleges started after 1900. The name "junior college" was coined by William Rainey Harper, of the University of Chicago. He created two separate divisions, the "Academic College," designed to offer the last two years of what many considered secondary or preparatory work; and the "University College," which constituted the real thing as its name indicates. The names did not stick, but the idea did, and by 1896 they were redesignated the "Junior College" and the "Senior College" (Eels, 1931). Among other things, Harper introduced the nation's first Associate in Arts degree. Thus "the student who was not really fitted by nature to

take the higher work could stop naturally and honorably at the end of the sophomore year" (Harper, 1900).

Harper also worked very hard to get Chicago-area high schools to take on the responsibility of extending their offerings to include college-level work, for which the University of Chicago would award credit (Zwerling, 1976). His efforts finally culminated in the establishment of what many feel to be the first independent public junior college in Joliet, Illinois in 1901. This college was, in fact, the result of the expansion of the Joliet high school (Gleazer, 1968).

Other public two-year colleges started in California at Fresno (1904-10), Missouri and Minnesota (1915), Kansas and Oklahoma (1920) and Texas (1921). By 1920, the American Association of Junior Colleges (AAJC) was founded and publicly announced its goal to make higher education available to an ever-increasing number of people (Palinchak, 1973).

In 1929, Walter C. Eels, Executive Director of the AAJC, defined the "junior college" as "a more widely diffused opportunity for two years of college in smaller units --an institution where closer contact is possible with instructors more interested in teaching than in research-- an institution making transition easier from high school restrictions to university freedom" (p.6).

Thus, he placed the junior college in the intermediary position between high school and the university. He viewed its role as twofold: for some, an adequate preparation for many life occupations in two years; for others, an excellent preparation under superior conditions for later specialization in the university.

But not everyone was quite as clear as Eels. Referring to the American people, Gleazer (in Garrison, 1967, p. 30) observed:

> (They) have yet to figure out fully this junior college, which insists that it is not a high school (though it offers many programs similar to those in high schools), claims to be higher education (while teaching printing, welding, and data processing), but is in many respects obviously unlike what the public have for many years conceived higher education to be.

The history of the community college is also the history of discussions on its twofold mission. While its initial founders struggled to create an image of a post-secondary institution where "serious work of distinctive college standard is being undertaken" (McLane, 1913, p. 116), there was increasing pressure on community colleges to offer some type of vocational education. As early as 1918, for example, Lange (p. 211) wrote:

> Probably the greatest and certainly the most original contribution to be made by the junior college is the creation of means of training for the vocations occupying the middle ground between those of the artisan type and the professions.

He called such education "culminal," which later somehow was changed to "terminal" education (Zwerling, 1976). Questions regarding this issue were a part of virtually every AAJC meeting through the 1930s and 1940s before it became inevitable that the AAJC begin to take the leadership in promoting terminal or vocational programs at community colleges. A key idea that influenced this change was the concept of the "semiprofession." Somehow it seemed more appropriate for colleges to be training people for "semiprofessions" than for mere "occupations" or "vocations." A key event was the Depression, in that it forced many students who ordinarily would have gone to more expensive four-year colleges to seek out the more practical programs. Later, the Second World War boosted the growth of vocational programs, as large numbers of students sought specialized training (Zwerling, 1976).

In 1947 the community college was influenced by the recommendations of the so-called Truman Commission Report, Higher Education for American Democracy (1947-48). Many found revolutionary the assertion that at least 49 percent of the population had the mental ability to complete a two-year college program, and at least 32 percent could go on to complete an advanced liberal or specialized professional education. Also, whereas earlier writers had always listed the transfer function as number one, with the

Truman Commission, for the first time terminal education was acknowledged by an official study to be the two-year college's primary function.

The California Master Plan for Higher Education (1960), constituted a landmark in the evolution of the community college into a fuller status within higher education. This plan delineated the relative roles of the three layers of pulic higher education in the state: the University, the state colleges, and the public community colleges. It set admissions guidelines for the university and state colleges, while implying an open admissions policy for the community colleges. Community colleges were established in all relatively populous areas of the state, and community college transfers were given priority in admittance to the other state institutions. The California Master Plan was extensively studied throughout the country, and during the 1960s a number of states adopted similar plans.

During the 1960s and 70s, the Carnegie Commission on Higher Education, although not "official," published more than one hundred reports and documents. In its short but powerful document on community colleges, the Carnegie Commission (1970) recommended that only community colleges have open admissions. They presented evidence to show how our three-tiered higher educational system was

socioeconomically stratified with upper-middle-class students most frequently attending elite four-year colleges and universities, middle-class students generally attending public four-year colleges, and working-class students, when they go, enrolling in two-year colleges.

This reality has been the basis for much of the recent criticism directed toward the community college. Burton Clark (1960), one of the earliest critics, sets forth the thesis that community colleges enroll a large number of students who aspire to transfer to a four-year college and receive the bachelor's degree but who are destined to conclude their education at the community college. Through counseling and testing that invite these students to consider more "realistic" alternatives, students are cooled-out by lowering their aspirations and settling for terminal occupational-technical programs. Steven Zwerling (1976) builds on Clark's argument, stating that community colleges have a hidden function in the educational process whereby they channel people into the same relative position in the social structure as that of their parents. He insists that community colleges maintain the existing social order rather than promote upward social mobility, as they profess.

Karabel's (1972, p. 526) thesis is "that the community college, generally viewed as the leading edge of an open and egalitarian system of higher education, is in reality a prime contemporary expression of the dual historical patterns of class-based tracking and of educational inflation." In effect, Karabel has gathered many of the criticisms leveled against the community college and has built a strong argument that equality of education does not result from equality of opportunity to attend non-selective institutions.

Jencks and Riesman (1968, p. 480) note that community colleges

> ...recruit many of their faculty from the public schools and many others from former teachers' colleges... show comparatively little deference to professional academic opinion about how an institution of higher learning should be run, and consequently teach both subjects and students whom most scholars regard as worthless.

Ironically enough, many present day community college educators would remark that Jencks and Riesman's criticisms of the community college constitute its strengths and set it apart from other higher education institutions.

Agreeing with Karabel, Clark and Zwerling, Jencks and Riesman feel the community college serves as a "safety valve" against pressures that might otherwise disrupt the dominant system, allowing the universities to go their own way without having to deal with the less capable or

uninterested majority. Astin (1977, p. 248) also agrees with the "safety valve" theory whereby "educators in more prestigious institutions have probably supported community college growth because it represented a way of expanding educational opportunities that did not threaten their own selectivity and eliteness." He believes the chances of students starting in a two-year college and later obtaining a bachelor's degree are less than had they started at a four-year institution. One would ask what chances are significantly decreased by starting at a community college. There are strong indications that for many students starting at a community college rather than at a four-year college greatly increases their chances of successful completion of a bachelor's degree.

Astin also found that the change in behavior of students attending community colleges is not as great as that among students who attend four-year institutions. But he also admits that this is due, in part, to the fact that most community colleges are commuter colleges and consequently are not able to provide the advantages associated with the residential experience, a significant factor in behavior change.

While there is disagreement with many of the attacks launched against the community college, it is the opinion of the writer that its critics perform a service to

administrators and student services personnel in warning them of the possible pitfalls and weaknesses of the system. These criticisms accentuate the need to utilize characteristics such as flexibility and adaptability to constantly reassess goals and methods of providing educational services and identifying the population served rather than stagnating in complacency.

Confusion and controversy regarding the philosophy and mission of the community college most likely will continue. However, the writer believes that it is possible to affirm that during the last two decades it has come of age and has identified a unique role among institutions of higher education.

This definition has been clearly stated by Fields (1962, pp. 63-95), who in his analysis of the community college, identifies five fundamental characteristics that establish the uniqueness of this institution.

1. Democratic: low costs; non-selective admission policies; geographically and socially accessible; and popularized education for the largest number of people.

2. Comprehensive: a wide range of students with widely varying abilities, aptitudes, and interests; a comprehensive curriculum to meet the broad needs of such students.

3. Community centered: locally supported and controlled; local resources utilized for educational purposes; a community service improving the general educational level of the community.

4. Dedicated to life-long education: educational programs for individuals of all ages and educational needs.

5. Adaptable: to individual differences among students, differences in communities, and the changing needs of society.

The community college has defined its identity and has carved its role in our society, in spite of its critics. However, the following fundamental questions still remain: Who are the students it is committed to serve within its stated philosophy of open admissions to provide an educational opportunity for all citizens regardless of educational background? What are their particular needs, and how can community colleges best work toward helping them meet these needs?

Student Characteristics and Needs

The history of higher education in the United States has evolved through three major philosophies about who should go to college (Cross, 1971). Basic to the aristocratic philosophy, in the early years of higher education, was the premise that only those young people who could afford it and who needed it for their station in life should attend college. The revolt against aristocratic philosophies of college admissions gave way to the rise of a meritocratic belief. Advocates of meritocracy felt that

criteria for college attendance should be scholastic ability and the willingness to study hard --in short, academic merit. Reaching its peak in the 1950s, meritocracy assumed that only a fairly small portion of the population had the ability to benefit from what colleges offered. This philosophy was seriously challenged by both the Truman and Eisenhower Commission Reports (Higher Education for American Democracy, 1947-48, and Goals for Americans, quoted in Kennedy, 1952) which stated that, respectively, 49 percent and 50 percent of the college-age population should be in college. While there remain many strong supporters of the meritocratic philosophy, since the 1950s there has been a gradual increase in the expansion of an egalitarian philosophy. This philosophy is carried out mainly by the community colleges, paving the way for a large influx of students, previously excluded, into higher education. K. Patricia Cross (1971) has called these students "new students." In her book, Beyond the Open Door, Cross stated that many colleges, even community colleges, continue to use traditional, meritocratic approaches to educating these new students, and that they must change their policies if they wish to serve these students effectively.

Earlier, Cross (1968) had summarized the research available on the community college student. In this study,

she found that the academic ability (actually, the academic weakness) of community college students to be one of the best researched areas of higher education. Most of these studies compared the academic ability, achievement and intellectual orientation of these students with both traditional, four-year college students, and with those that did not go to college, using traditional measures. When using this approach, findings usually placed community college students' academic ability and performance somewhere between those of students in four-year colleges and those that did not attend. However, Cross maintained, the range among the community college group has consistently been found to be the broadest among the three groups.

In reviewing the research on community college students, Cross (1968) found that low test scores on traditional tests of academic ability are the most distinguishable single measure available for this group. There are many studies documenting the fact that these students have educational problems, that is, they do not perform traditional educational tasks with competence (Seibel, 1965; Hoyt & Munday, 1966; Medsker & Trent, 1965; Seashore, 1958; Astin, Panos & Creager, 1967; Panos, 1966).

Generally speaking, community college students come from families with lower incomes than those of four-year

students (Cross, 1968). They have been less likely to have been encouraged to attend college, and are less likely to have discussed college plans with anyone while they were in high school (Rehberg and Hotchkiss, 1972). In a SCOPE study --School to College: Opportunities for Postsecondary Education-- (Cross, 1968), almost 75 percent of community college students indicated a need for help in the area of career planning.

Concerning their motives for attending college, new students are affected by the rising educational expectations of the society; they attend not from the anticipation of the joys of learning or from intellectual curiosity, but from the recognition that education is the way to a better job (Cross, 1976). Thus, they seek careers having both immediate payoffs and close relationships between training and subsequent employment (O'Banion, 1969). Since they are initially less inclined to decide to go to college --and then more likely to postpone enrollment (Astin, 1975; Medsker and Tillery, 1971) --two-year students are on the average older than traditional students and more likely to attend part-time, mostly because they are also employed. For these same reasons, they are more likely to live at home, often facing opposition from peers and parents, and have a lower involvement in extra-curricular activities (O'Connell, 1970; Cohen, 1969;

Monroe, 1972). In the 1980s, the community college population has been affected by certain external factors, especially financial. The national recession and cutbacks in federal financial assistance programs have caused many younger students to start at a community college rather than a four-year school.

Very little is known about the personality characteristics that differentiate community college students from others (Cross, 1968). Limited research in this area has shown that, in general, community college students are more conventional, less independent, less attracted to reflective thought, and less tolerant than their peers in four-year institutions (Medsker, 1960). But "the study of the complexities of personality are still rather in a primitive state, and improved instruments and methods are badly needed" (Cross, 1968, p. 51).

With a profile which is drastically different from that of the traditional student, it follows that community college students also have different talents and needs. Offering these new students traditional programs and services has only resulted in their appearing less able, less intellectually oriented, and less motivated to seek higher education. New philosophies, approaches and services are required to assist these students in reaching their full goals and potentials.

Student Development

Initial attempts to address the needs of those students whose academic performance did not conform with accepted standards started almost a century ago and focused on remedial programs, that is, programs geared toward helping students overcome weaknesses in academic backgrounds and skills. During the aristocratic period of American education, students with difficulties were not seen as stupid, but as lacking discipline in planning and organizing their study. Courses focusing on good study habits through time management, note taking, test preparation, and health practices were established on many campuses (Sharp, 1943). During the 1930s and 1940s, additional deficiencies were identified and this led to the introduction of remedial reading projects, covering comprehension, speed, vocabulary and other so-called mechanics of reading (Charters, 1941; Triggs, 1942).

By the 1950s and 1960s the numbers of students seeking college enrollment was growing and more serious remediation efforts were established to insure that students attending the universities were making good use of their opportunities. Some universities required students with poor high school records and low test scores to make satisfactory progress in a summer remedial session as a

condition for admission in the fall (Goodstein and Crites, 1961).

Most of the remedial efforts during the educational meritocracy were directed toward helping the underachievers, rather than those of low academic ability (Pittman, 1960). By the mid-1960s, the concept of the underachiever had become comprehensive, including the underlying motivational and socio-psychological problems. There has been a gradual increase in an understanding that students growing up in sociocultural settings which are antithetical to school achievement are likely to have problems with study habits, basic skill development, and motivation. Because of this, the trend today is toward remediation or developmental efforts embedded in a total program that includes cognitive, social and emotional components (Cross, 1976). Many educators refer to this concept as "developmental education."

Before continuing, it is worth mentioning the controversy surrounding the use of the terms "remedial" and "developmental" to describe programs for non-traditional students. Articulated by Roueche and Wheeler (1973, p. 223),

> Remedial implies the remediation of student deficiencies in order that the student may enter a program for which s/he was previously ineligible. Typically, such work consists of non-credit courses in English, mathematics, or study skills taken as prerequisites to credit courses. Developmental, or

> compensatory, on the other hand, refers to the development of skills or attitudes and may not have anything to do with making a student eligible for another program. Under these latter approaches, curricular materials are frequently modified to begin credit work where the student is and the academic calendar is modified so that the student can move at his own pace in acquiring mastery of a course.

Cross (1976) further refines these definitions, stating that the difference is more to be found in the purpose or goal of the program. While in remediation the goal is to overcome academic deficiencies and, therefore, has a negative connotation, developmental education seeks to give attention to the fullest possible development of talent and to develop strengths as well as to correct weaknesses. In this sense, remediation is a legitimate part of developmental education.

In research on the effectiveness of remedial efforts, both optimists and pessimists have found evidence to support their point of view. For example, there is considerable agreement that students with poor study techniques are easier to help than those with low ability, and that students with severe personality problems are also very resistant to treatment with how-to-study courses (Dimichael, 1943; Tresselt and Richlin, 1951). On the other hand, researchers from the mastery learning school are generally optimistic about remediation for students of modest academic ability (Block, 1971). The general thesis

of mastery learning is that standards of performance should remain constant for all students and that time and process should become the changing variables. Conventional education has treated time as a constant and has permitted the level of achievement to vary. It would be better, say the advocates of mastery learning, to make sure that each student has mastered the basic skills before proceeding to subsequent learning, however long it may take.

Regardless of ability level, proponents of developmental education consider that "cognitive skills training must be integrated with the social and emotional development of the student" (Cross, 1976, p. 42). Reading specialist Maxwell (1971, p. 361, 422) writes:

> We are very doubtful that exposure to a reading-improvement course, to a pacer or tachistoscope or to study techniques --without intensive counseling-- will change these students' habits or enhance their chances of succeeding academically. . . The college reading specialist needs to understand the dynamics of personality, motivation, and interpersonal relationships and should possess counseling skills if he is to be effective in helping students acquire the insigts which must precede and accompany any changes in their reading and study skills behavior.

Thus, in the developmental education philosophy, counseling is seen as the "heart" of the services, but these extend into every aspect of out-of-class learning and provide a much-needed dimension of higher education in its effort to facilitate the development of the total individual. Students are viewed as progressing through

normal, sequential stages of development, in need mainly of opportunities to experience their world more fully in preparation for further development (Creamer and Cloves, 1978).

One-on-one strategies, an essential type from a therapeutic view, are deemphasized in developmental education, although not eliminated. Rather, strategies designed to impact the entire institution receive emphasis. Many learning problems of students can be diagnosed by assessing conditions of the total learning climate of a college and can be dealt with preventatively instead of therapeutically. Thus, "developmental education is proactive rather than reactive, in its stance toward development; it operates in the mainstream rather than on the penumbra of education" (Creamer and Cloves, 1978, p. 27).

Developmental Education Approaches

While there is more agreement than disagreement among the various approaches to developmental education, they have different backgrounds and make somewhat different assumptions. These approaches can be divided into three types: humanistic, developmental, and multidimensional.

Humanistic approaches to student development believe that individuals are basically good and, given the right conditions, will move in positive directions. Proponents of this type of approach include G. Stanley Hall, Abraham Maslow, and Carl Rogers. Humanists would assist each student to grow and develop in unique individualistic ways through providing a warm and accepting environment that encourages self-examination and self-actualization (Cross, 1976). O'Banion, Thurston, and Gulten (1972, p. 204) are more recent adherents of a humanistic philosophy.

> They believe that every student is a gifted person, that every student has untapped potentialities, that every human being can live a much fuller life than he is currently experiencing. They are not only interested in students with intense personal problems, they are interested in all students --in helping those who are unhealthy to become more healthy and in helping those who are already healthy to achieve yet even greater health.

Developmental approaches grew out of the work of personality theorists such as Erik Erikson and Jane

Loevinger and cognitive theorists such as Jean Piaget and Jerome Bruner. "Developmental theorists are interactionists, holding that the individual and the environment interact in a continuing dialogue that leads to new organizations of knowledge and new perceptions of experience within the individual" (Cross, 1976, p. 151-2). Agreeing with the humanists that certain directions of development are universally desirable, they develop hierarchical models in which there is an invariable order for increasingly advanced stages of development. Of the developmentalists, Perry and Kohlberg concentrated on high school and college students. Perry's (1970) nine developmental positions were derived through close observation and measurement of Harvard undergraduates as they proceeded through college in the 1950s and 1960s. His model moves from perceiving the world in absolutist terms (positions 1,2,3), to making more room for diversity and recognizing the problematic nature of life (positions 4,5,6), to finding one's own place through personal commitment in a relativistic world (positions 7,8,9). In brief, he considers that students' development moves through sequences --from simplicity to complexity and from differentiation to integration. Although this theory may be useful in understanding the development of Harvard

students, it appears inapproapriate for general application to such a diverse student population as that of the community college.

Kohlberg's (1971) model for moral development has much in common with Perry's scheme. Kohlberg refers to his theory as cognitive-developmental and is concerned with the process of development. He believes that the basic idea of developmental theory is to introduce students to problems that will stretch the cognitive structure, permitting it to grow to more advanced levels of development.

Although developmental theories have been especially attractive to educators because they integrate what one is with what one knows (Cross, 1976), they fall short when trying to use them to understand the wide spectrum of community college students. That is because these models were formulated by observing students from essentially homogeneous age, social, and intellectual groups.

Multidimensional models of student development appear to be more appropriate when dealing with the community college population. These models view individuals growing at different rates along separate, but not necessarily independent, dimensions. Developmental status of students is indicated not by a single structure or core but by a profile showing the level of attainment reached on each

dimension of personal development. These models are characterized by the pragmatism of their methods: they define their dimensions, devise strategies to attain their goals, and design assessment procedures to measure attainment. The findings of this process then provide the recipe for implementation. The dimensions used to set goals may come from almost anywhere. They may come from a group of people sitting down together and agreeing that a particular set of competencies will constitute their definition of personal development; or they may be derived through the application of various kinds of research procedures. Whatever the origins of the particular dimensions, multidimensional models typically cover a broad range of human development, including intellectual, social, physical and emotional aspects (Cross, 1976).

One multidimensionalist, Chickering (1969), used a systematic review of theory and research on college student development to arrive at his seven vectors:

1. Achieving competence
   a. Intellectual
   b. Physical
   c. Interpersonal
2. Managing emotions
3. Becoming autonomous
4. Establishing identity
5. Freeing interpersonal relationships

6. Developing purpose
7. Developing integrity

Chickering hypothesized that colleges can accelerate or retard growth on each of these vectors, and he identified certain "conditions for impact" that relate to his seven vectors. His major attention was directed to pulling together the various research studies in which treatment has some measurable effect on outcome. As one would expect, he was unable to identify one-to-one relationships between treatments and outcomes. Rather, he arrived at some fairly broad and general conclusions, which he presented as hypotheses that have been documented by research findings. He proposed clarity, consistency, and seriousness in setting institutional objectives; choice and flexibility in curriculum and teaching methods which promote discussion, open and frequent communication; and a student culture which amplifies rather than attenuates the impact of curriculum and student-faculty relationships.

In another multidimensionalist model, that developed at Alverno College, research as a methodology involving effective assessment and evaluation was of the utmost importance (Alverno College, 1974). Implementation hinged on assessing present levels of competency, determining

goals, and evaluating results. The following eight competencies were outlined as basic to this model:

1. Develop effective communication skills
2. Sharpen analytical capabilities
3. Develop workable problem-solving skills
4. Develop facility in making independent value judgments and independent decisions
5. Develop facility for social interaction
6. Achieve understanding of the relationships of the individual and the environment
7. Develop awareness and understanding of the world in which the individual lives
8. Develop knowledge, understanding, and responsiveness to the arts and humanities

In summary, all three types of models can contribute to the understanding of community college students. Humanistic models contribute a philosophical framework and goals to strive toward, although their focus may tend to exclude some of the social and cultural considerations. Multidimensional models are typically weak on theory and strong on research and implementation --a direct reversal of the priorities of the developmentalists. They are fundamentally behaviorists in that they define measurable objectives, attempt to find some relationship between cause and effect, and devise strategies to bring about the desired outcome (Cross, 1976). This is perhaps why they are the most appropriate for studying the community

college population, which is diverse and rapidly changing, and unresponsive to one singular approach or theory. As Knefelkamp (1980, p.10) suggested:

> Perhaps the one theme which ties together all these realities of community college education is the theme of "students in process." Our campuses seem to be populated by individuals who are moving, growing, searching, changing, developing, and doing. Thus, a model for student development workers to use in meeting the needs of these students must be a model aware of, if not in fact directed at, the process. It must be a model that can allow us to encounter the students whoever they are and wherever they are and move with them so they become who and what they want to be, and toward getting where they want to go.

Assessing Career, Personal, and Study Skills Needs of Community College Students

Key to the implementation of a developmental education philosophy is the assessment of student skills to find out where they are at entry to college or at any other point in time. Most of the research on assessment has been limited to the academic area and, as pointed out earlier, has focused on the weaknesses of community college students. Efforts in the areas of personal and career needs have been extremely limited. With community college students, perhaps more than with other college students, personal and career factors are undeniably linked with academic success; thus, the value of "completing the picture" to better understand and serve

the community college student.

Peterson (1973) found that the greatest discrepancies between education as it is and as it should be (that is, the greatest dissatisfaction) among constitutent groups occured with respect to the priority given to the personal development of students. He researched groups of students, faculty, administrators and community residents, and found that students and the general public agreed that this goal should receive a much higher priority than it presently received. While community college faculty and administrators thought that personal development should receive a quite high third place priority, university faculty were more reluctant; they would grant it only tenth-place priority. All groups wanted to see more attention given to helping students to understand themselves and to achieve a sense of direction, and they all felt that the academic development (accumulation of knowledge in the academic disciplines) was overemphasized.

Despite the lack of direct focus on personal development, Cross remarked that "higher education as a whole is more successful than many people think in helping student grow toward personal maturity" (1976, p. 144). Feldman and Newcomb (1969), in their research summary, cited more than 1200 studies on the personal development

of students as they proceed through college. However, much of the research is outdated and cannot be used to draw definitive conclusions concerning a population that is characteristically changing. Another limitation of previous studies is that most of the data have been collected on residential campuses, and very little on community colleges. Research has shown that, generally speaking, the greater the contact of students with colleges, the greater the change. Students living on campus, for example, change more than students living in off-campus housing, who change more than students living with parents at home (Chickering, 1974; Astin, 1977).

The primary responsibility for addressing the personal development areas has traditionally rested in the student services areas. Therefore, many assessments have focused on the services of particular offices within the student service area, e.g. mental health services (McWilliams and Gerber, 1978), and career planning (Ard and Hyder, 1978). Other studies have focused on the programming needs of particular types of students, e.g. adults (Sturtz, 1971; Rawlings, 1979), or part-time adults (Jones and Diener, 1975), women (Hipple and Hill, 1973), returning women (Brandenberg, 1973; McClain, 1979), men (Hochman and Nietfeld, 1976), commuter students (Graff and Cooley, 1970; Hardwick and Kazlo, 1973), and married

students (Flores, 1975; Greenberg and DeCoster, 1976). Still others have examined the combination of particular types of students with particular types of program offerings, e.g. financial aid needs of part-time students (Schubert and Dietz, 1979), and career planning needs of freshman students (Walters and Saddlemire, 1979).

Following is a summary of some of the most comprehensive approaches to assessment and programming developed to date, addressing the areas of career, personal, and study skills development.

Assessment Models and Programs

In surveying the literature on previous attempts at assessing the affective areas of community college students, the first reality encountered is the lack of valid and reliable studies in this area, with appropriate follow-up and evaluative studies. McLelland (1973) offered empirical data from his own research and that of others to show that ego strength may be an important variable in educational success. And Losak (1973) stated that "there are sound theoretical and experiential reasons for believing that nonachievement of the academically underprepared student is often based on impairment of functioning due to personality disturbance or negative attitudes" (p.43).

Florence Brawer (1973) offered an operational model for assessing community college students based on concepts of ego functioning, which she defined as functional potential. Using notions of development, maturity, and ego strength rather than socioeconomic data, grade point averages, measures of achievement, or intellectual disposition, functional potential measures the degree to which a student has developed six fundamental personality traits basic to learning and individual growth:

1. Relatedness/aloofness
2. Identity/amorphism
3. Flexibility/rigidity
4. Independence/dependence
5. Progression/regression
6. Delay of gratification/impulse expression

According to Brawer, the functional potential approach encouraged individual strengths and did not rely on traditional assessment devices. Its value was in not only identifying students' level of functioning, but in evaluating individual needs and impact on institutional methods, services, and curricula to meet them. After testing this approach on community college students, Brawer concluded that it seemed to be a valid way of measuring ego processes, and "If this population is

representative of students in other community colleges, then these institutions must find nontraditional ways of dealing with their students if they expect to enhance development" (1973, p. 132). She also considered that functional potential appeared to be an accurate means of predicting completion of a school program. More students in the low functional group dropped out of school than did those in the medium and high groups. Indeed, with only about one third of the very high community college student attrition explainable on "intellectuve grounds" (Monroe, 1972), other factors affecting retention would beem to warrant far greater attention from researchers and counselors (Lunneborg, 1977).

The Cluster Analytic Needs Assessment Model (Lewis, 1981) was developed and implemented at East Central University in Ada, Oklahoma during the 1979-80 academic year. This model consisted of four steps: (1) identification of institutional goals; (2) assessment of the current level of programming; (3) assessment of the desired level of programming, and (4) analysis of assessment data with accompanying suggestions for program changes or refinements. Steps 1 and 2 provided the information necessary for the construction of the comprehensive survey instrument used in step 3 to obtain assessment data from students. A questionnaire was

developed with some 50 items representing current or projected programs from the various offices in the student affairs division as well as demographic items. The questionnaire was distributed randomly to a sample of enrolled students.

The results indicated that expressed need and/or projected use were not necessarily closely related to knowledge of service availability. Newly arrived students had very low knowledge about services available.

This model provides a systematic and comprehensive analysis of student service needs, intended use, and knowledge of programs and services. It is a model for data collection and analysis for institutional use in planning programs and services and in targeting dissemination efforts and particular groupings of students, rather than a model for assessing individual student needs and responding to these.

A needs assessment study of returning students at Oklahoma State University (Riddle, 1978) focused on the reasons mature students returned to school and asked them to rate progress toward their goals. The chief reasons for returning to school were to get a degree, to prepare for employment, to get a better job, to increase independence and self reliance, and to increase interpersonal effectiveness. While they remembered

feeling different from other students and had concern about failure at the time of entrance, these attitudes changed over time.

McClain's (1979) study on the needs of adult women returning to school at Springfield Technical Community College found that although adult women return to college with goals, they feel the need for the following services: career development/career counseling assistance; assistance in study skills; tutoring services, and flexible course scheduling; personal counseling services; day care services; an orientation especially geared toward them; and support groups. On the basis of these findings a model was designed to serve adult women students. The program began with the application process and ended with a post-graduation evaluation, incorporating many of the services desired by this group.

One of the best documented characteristics of a many community college students is a high interest in obtaining career and job related skills. In this regard, Reed's (1979) study of area employers for Spartanburg Technical College, in South Carolina, is worthy of mention. Employers stated that job failures are most often due to a lack of human relations skills than a lack of specific job related skills. They also identified 13 abilities or traits necessary for persons to be successful on the job.

These traits were then placed in order of importance. Interestingly, the first 10 items related primarily to the affective domain, rather than to cognitive skills:

1. Honest and dependable
2. Reliable and punctual
3. Get along with people
4. Cooperate with supervisors
5. Accept and handle responsibility
6. Willing to undergo further job skill training
7. Think of self as worthy person
8. Communicate well orally and listen effectively
9. Work with minimum supervision
10. Solve personal and professional problems
11. Possess entry-level job skills/knowledge
12. Read with understanding
13. Understand required mathematics

If employers are interested in hiring persons with these skills, colleges are concerned with how students acquire them. Most educators in the past have left the acquisition of these skills to chance or have assumed that whereas formal education is itself in a social setting, and includes working with other persons, these skills will be practiced and thereby hopefully acquired. Within the developmental education approach, however, these skills are included in the definition of a well-developed

student, and specific activities are designed to bring about these competencies in individuals (Rippey, 1981).

A study on the mental health needs of students in an urban university (Indrisano, 1977) showed that females express more needs than males. Amount and intensity of difficulties was inversely related to age. Income was inversely related to difficulties experienced, and an inverse relationship existed between grade point average and level of concern. Study habits and grades were by far the most important level of concern. Depression, difficulty choosing a career, sleep difficulties, crisis situations, and interpersonal skills followed as high need areas. Reports of students' help-seeking behavior indicated that those who reported having sought help tended to have higher adjustment scores than did students who had not sought help. An important finding was that the concerns for which students sought help were not necessarily the most frequently occurring concerns. Awareness of available services was cited as a possible factor in whether or not students sought help.

Alvin Community College, in Texas (Bennett, 1982) has developed a program with the following goals:

1. The advancement of the student's total human development, including needs in the affective area.
2. Achievement of competency in reading, English and mathematics.
3. Prepare the student for a higher level of educational attainment at the post-secondary level.

Students who have not taken standard achievement tests are given a complete battery of assessment tests during the orientation program: academic achievement tests, a learning styles inventory, and a self-assessment inventory. The results are provided in time for the registration period. For those students who show need, basic skills and courses and human development courses as well as counseling services are offered.

Forest Park Community College, in St. Louis, devoted extensive study to the problem of the educationally disadvantaged (Richardson & Elsner, 1965). After a faculty committee found that academic difficulty was experienced by 46% of students, a recommendation was made to establish an experimental program to attempt to meet the needs of these students. One of the recommendations was to provide students with intensive counseling on an individual and group basis to (a) minimize emotional

factors inhibiting success, (b) aid students to assess realistically their potential and to relate this to vocational goals; and (c) identify students incapable of benefiting from any college program and refer them to other community resources such as apprenticeships, job openings, and training courses. An additional component of the program was to assign students to five-person teams of helpers (counselor, reading specialist, and three faculty members). The basic approach was a core curriculum organized around the social science area. This program, in addition, addressed the broader development of the person, including personal and emotional well-being as well as intellectual development; assisted the student in coping with the environment; and emphasized the individual student's needs.

The counseling staff at Montgomery College (Blimline & Klimek, 1977), as a result of changing resources and a realization of the changing nature of the student body, chose to shift their efforts in personal and career development of students. They moved from an emphasis on a required orientation course to the development of a series of one-credit courses specifically designed to meet student needs that revolved around intellectual, social, and personal tasks. The basic tasks covered by these courses were:

1. Developing personal autonomy and responsibility
2. Developing interdependence and trust
3. Developing appropriate educational plans
4. Developing realistic career plans
5. Developing mature life-style plans
6. Developing tolerance and understanding of others
7. Developing mature relationships with peers

After implementing and evaluating this program, Montgomery College found that it involved counselors, students, and the college environment in a meaningful approach to dealing with individual differences.

The program developed at North Shore Community College, in Beverly, Massachusetts, has similarities with both Alvin Community College and Montgomery College, with a more comprehensive approach than either. It involves an assessment of not only academic (English and math) skills, but also personal, career, and study skills. Students demonstrating high need levels in any of these areas are recommended to enroll in appropriate courses. To address personal and career needs, the Student Services Division has created a number of personal development courses. These are one-credit, 15 hour courses offered through each semester on topics relating to the areas addressed by the assessment program and other areas. The personal and career assessment instrument, the Career, Personal, and

Academic Skills Inventory (CPASI), focuses on six areas that were considered of concern to large numbers of community college students, as follows:

1. Career awareness, planning and decision making
2. Personal decision making and problem solving
3. Stress awareness and management
4. Self awareness and self concept
5. Interpersonal communications and relations
6. Reading and study skills

Although appearing quite successful in meeting the goals of the assessment program and of the college, research on the effectiveness of this program would provide valuable data for continued and more generalized use of this approach and the CPASI instrument.

Summary and Conclusions

Although research in the specific area of community college student needs is limited, it consistently points to the fact that with this group more than others, personal and career needs cannot be clearly separated from academic ones. While this statement can be made of students in general, it is critical when dealing with community college students. The progress of these students through the educational system has been

particularly hampered by lack of successful learning experiences, lack of encouragement, lack of stimulating environments, low self esteem, and lack of career direction. Traditional programs and assessment instruments have focused primarily on the academic weaknesses of these students, and have generally failed to lead to the desired change. Developmental education approaches, which integrate cognitive and affective skill areas, appear more promising in dealing with the community college. From among these, multidimensional approaches offer the flexibility required by a diverse and constantly changing student population.

The community college has entered the 1980s with clarity in its mission and goals; nonetheless, they are constantly being called upon to respond to the challenges of critics, to changing priorities in government funding, to changes in the socio-economic structure of education and society, and to changes in the student population. While typical community colleges students continue to seek short-term career preparation, during the last few years there has been an increase in younger students looking to the community college as a transfer institution. Many of these students have strong academic skills and are seeking advanced courses in math and sciences. Their choice of the community college is for geographic and financial

reasons, and due to the community college's reputation as a supportive environment. Community colleges will be required to adjust resources and programs to meet these and other changing needs.

For this, the development and refinement of models designed to assess students as they enter the community college in academic, career, and personal areas, and to provide the skill building courses and programs they need to reach their educational goals, are essential. Programs with proven results should be identified and applied more widely. This process is in its embrionic stage; further research in the area is necessary to guide efforts toward the desired goals.

C H A P T E R I I I

DESIGN AND METHODOLOGY

The purpose of this chapter is to outline the steps that will be followed in the research design and strategy or methodology. Topics covered will also include instrumentation, sample identification, and data collection.

Research Population Identification

To avoid a common research flaw, the population to be used in a research study must be defined precisely, and the significance of the findings must be limited to the population sampled (Rummel, 1958).

For the purpose of this study, the population was defined as incoming matriculated day students at North Shore Community College during August 1982. Most of these students were seeking full-time enrollment, that is, 12 or more semester credits. Students may or may not have had previous college experience. Those having prior experience would have done so through enrollment at another college or the Division of Continuing Education (the evening division) at North Shore Community College.

The population was limited to community college students, as the literature has demonstrated that students attending the community college have characteristics and needs different from those of students attending other institutions of higher education (Cross, 1976, 1971, 1968; O'Banion, 1969; Astin, 1975; Medsker & Tillery, 1971; O'Connell, 1970; Cohen, 1969; Monroe, 1972). North Shore Community College was chosen for the study because it is the only community college in Massachusetts to have developed an assessment program which includes career, personal, and study skills in addition to traditional academic subject areas. The writer had a special interest in students from North Shore Community College because of her experience as a counselor and orientation coordinator there.

Incoming students rather than returning or continuing students were selected because the writer considered that the beginning of a college program was the most appropriate time to assess students' needs and to introduce them to services and courses which responded to those needs. Incoming students were also selected on the basis of their availability for participation in a research study, through the full day Assessment/Orientation/Registration program. Incoming students are required to attend this program to sign up

for courses for their first semester of college. The design of this program allowed for the identification and differing treatment of experimental and control groups with a minimum of disruption. Although one of the limitations of the study was the use of a population drawn from only one college, the nature of the community college is such that it attracts students with similar personal characteristics, and the primary differences are related to geographical factors. Therefore, it is anticipated that the results of this study may be generalizable to other community colleges.

Population Size

The total population of incoming students participating in the Assessment/Orientation/Registration program during August 1982 was approximately 600. From this population, experimental and control samples were drawn using a systematic sampling procedure. This procedure involves selecting every Kth person, depending on the size of the population and the desired sample size (Gay, 1976). It was the writer's decision to use the largest sample size possible, to strengthen the validity of the research. At the same time, however, the control sample was to be singled out during the Assessment/

Orientation/Registration program not to participate in an established part of this program, that of taking the CPASI. Therefore, a balance between large size and minimum disruption to students and the program was sought. The experimental group required no special treatment during the Assessment/Orientation/Registration program and was actually selected at a later date from the records stored in the Academic Skills Center. Another factor affecting sample size was the attrition expected of these groups through the follow up phase of the study. Whereas the control group students were asked only to respond to a simple questionnaire and return it by mail, experimental group students had a more involved follow-up, requiring an appointment for a retest and an interview. In addition, factors such as dropping out of school, non-availability during the follow up period, and unwillingness to participate in the follow up procedures were expected to significantly decrease the sample sizes during the follow up phase of the study. Therefore, sample sizes of approximately 100 for the control group and 200 for the experimental group were initially planned.

A decision was made to select the control group by identifying every sixth person arriving at the Assessment/ Orientation/Registration program to attend a program which excluded the CPASI testing. This procedure yielded a

total of 91 students for the control group. To select the experimental group, every third student folder from among those that had taken the CPASI was identified, for a total of 206 experimental students.

For the follow up phase of the study, samples were considerably reduced, in spite of numerous efforts to obtain participation. Complete follow up data was obtained from 47 experimental group students and 50 control group students.

In analyzing the data in this study, the initial larger samples were used whenever possible. The smaller samples were used only when analyzing results for which data on the larger sample was unavailable, to minimize the bias due to subject mortality.

Instrumentation

The study utilized the following three instruments:

1. Career, Personal, and Academic Skills Inventory (CPASI). This instrument was given twice to experimental group students, once during the Assessment/Orientation/ Registration program, and again after completing one semester of college.

2. Structured interview questionnaire for follow up of the experimental group students.

3. Questionnaire to be mailed to control group students.

Career, Personal, and Academic Skills Inventory (CPASI)

The CPASI is a 50-item objective instrument in which the student is asked to either agree or disagree with self-statements reflecting need or lack of need in six areas considered to be of particular relevance to community college students. The CPASI was developed by the writer for use in the Assessment/Orientation/Registration program at North Shore Community College after several attempts to find standardized tests meeting the established criteria on the market had proven fruitless. The instruments considered and piloted include the Mooney Problem Checklist, the Priority Counseling Survey (Mincomp Corporation), and the Cooperative Institutional Research Program (CEEB). Appendix A is a detailed description of the pilot studies using these instruments and the development of the CPASI, and Appendix B contains a copy of the CPASI.

Structured Inverview Questionnaire for the Experimental Group Students

For the follow up phase of the study, students in the experimental group were invited to retake the CPASI and participate in a structured interview at the end of their first semester of college. Since the physical presence of students was necessary for the CPASI retesting, it was decided that a structured interview format rather than a mailed questionnaire would give cohesion and increase the efficiency of the activities. The purpose of the interview was to obtain information regarding students' perceptions of their need levels by direct questionning to compare with those expressed on an objective inventory, the CPASI. The interview format consisted of six sections:

Section 1 consisted of four questions in which students were asked to rate, on a Likert-type scale, their opinions relating to the clarity, helpfulness, and comfort level of the CPASI.

In Section 2, students were given a list of areas "that are frequently of concern to community college students." They were asked to indicate, on a scale of 1 to 5 (1=not concerned, 5=highly concerned), their level of need (a) before the semester started, and (b) presently. The areas listed paralleled the six areas addressed by the CPASI: career development, decision making, stress

management, self awareness, interpersonal communications, and reading and study skills. Although at least four months had gone by since students began college, it was considered important to obtain a retrospective self rating of students' perceptions of their need levels, for comparison both with present ratings and with initial CPASI scores.

Section 3 consisted of an open question asking students to mention any other areas, not included in part 2, that were of concern with which they felt NSCC should be able to help them with.

In Section 4, students were given a list of services available at the college and were asked which ones they used, how many times they used each, and to rate their level of satisfaction with the ones they used on a scale of 1 to 5 (1=very dissatisfied, 5=extremetely satisfied). The following five services were included in this section: Counseling, Academic Skills Center, other tutoring labs (computer, math, business), Student Life Office (or related student organizations), and faculty advisor.

In Section 5, a list of 17 personal development and academic skill building courses was read to students, and they were asked to indicate past enrollment or plans for future enrollment in these courses. The courses on the list were those appearing as specific recommendations or

general suggestions on the Interpretation Guide of the CPASI.

In Section 6, students were asked to try to remember the original results of the CPASI, and whether or not they had received a recommendation in one or more of the six areas. If they indicated having received recommendations, students were asked if they followed them and why.

To insure consistent interpretation of the interview questions, only professional counselors were employed as interviewers. Furthermore, the interviewers were required to participate in a training session to clarify each question and to standardize the procedures to be employed.

Although the nature of the study made actual pilot testing of the interview format impractical, during the training session the interviewers made suggestions that were incorporated into the final format.

A copy of the structured interview format is included in Appendix C.

Questionnaire for Control Group Students

For the follow up phase of the control group the decision was made to use a mailed questionnaire rather than a structured interview. The main reason for this choice was that control students did not need to be retested on the CPASI, which was the factor requiring the

physical presence of experimental students. Furthermore, it was considered that a mailed questionnaire would increase the response rate. The disadvantage of this approach was that the interview responses of one group were to be compared with questionnaire responses of another. While this is one of the weaknesses of the design, a strong effort was made to design the two instruments so that they would mirror each other whenever possible.

The questionnaire consisted of four sections:

In Section 1, students were asked to rate their level of concern in each of the designated six areas, at present and before school started (similar to section 2 of interview).

Section 2 was an open question providing an opportunity for students to mention any other areas of perceived need with which they considered the college should be of assistance (similar to section 3 of interview).

In Section 3, students were given a list of five support services and were asked to indicate their use, number of times, and level of satisfaction on a scale of 1 to 5 (similar to section 4 of interview).

In Section 4, students were asked to indicate their enrollment or possible future enrollment in personal development and study skills courses (similar to section 5 of interview).

A copy of the questionnaire form is included in Appendix D.

Design and Implementation of the Study

Once the instruments were designed and refined, the actual data collection and follow up procedures were accomplished as follows:

Initial Data Collection

During the August 1982 Assessment/Orientation/ Registration program, the control group was selected and received a traditional explanation of support services and courses. The remaining students, from which the experimental group was to be selected, participated in the program utilizing the CPASI.

Early in the Fall '82 semester, the experimental group was identified by selecting every third student that had taken the CPASI. Student assessment folders, containing the CPASI results, were arranged in alphabetical order in the Academic Skills Center.

Students' scores on each of the six scales were recorded. Additional data collection on both samples was undertaken during the Fall '82 semester, by obtaining from student records the following: age, sex, program of study, credits attempted, and standardized reading scores.

Follow-up procedures

Toward the end of the Fall '82 semester, experimental group students were mailed a letter requesting voluntary participation in a study of the career, academic, and personal needs of community college students. Confidentiality and anonymity were insured. Students were asked to call a phone number to schedule an appointment, which would last approximately one hour. (See Appendix E.)

Letters were mailed to the 206 students in the experimental group. Initial responses to this mailing were extremely low (less than 15), due possibly to timing (during final exams) and the amount of effort required (making a phone call to schedule an appointment and attending a one-hour appointment). Approximately one week later, a reminder postcard was mailed to nonrespondents. The postcard generated a larger response than the initial letter. Possible explanations for this were timing (after finals), greater visual appeal and simplicity of the

postcard (see Appendix E). Although at this point, approximately 30 students had scheduled appointments, only 22 actually attended these. Therefore a decision was made to attempt to contact by phone all nonrespondents to increase the return. Phone calls were made primarily in the evening, between the hours of 5:00 and 9:00 p.m. The same counselors who would be interviewing students made these phone calls. The following statement was prepared and delivered consistently during the phoning period:

> My name is _____ and I'm calling from the Counseling Center at North Shore Community College. A few weeks ago we wrote to you asking for your participation in a study on community college students. We haven't heard from you yet, and we're still very interested in your opinions. Would it be possible for you to come in for a brief appointment (about half an hour)?

The reduction of the appointment time, from an hour to half an hour, was decided after completing a number of appointments. Response from students during the phoning was generally positive, when contact was successful. However, there were many reasons for lack of success in contacting students, among these: lack of phone or unknown phone number, student had moved, student was away during the phoning period, uncooperative family members, or no answer to repeated calls. When successful in reaching the student some did not choose to participate for the following reasons: not attending college any longer, illness, family problems, schedule conflicts, and

lack of interest in the study. The phoning effort lasted from early January to early March, 1983. At that point, the follow up group consisted of 47 members, a sample which the writer considered sufficient for the follow up component of the study.

To follow up on the control group members, a cover letter was mailed along the questionnaire form at the beginning of March 1983. In this letter, students were asked to respond to "a few questions regarding your experience (at NSCC) so far." Students were asked to complete a questionnaire that would take 5-10 minutes of their time, and to return it in an enclosed self-addressed, postage-paid envelope. As with experimental group members, students were assured of confidentiality and anonymity. (See Appendix F.)

Letters were mailed to the 91 students in the control group. The initial response was approximately 20, a much higher rate than the initial response of the experimental group. This can be explained by timing (the beginning of a semester), and the ease of the response required (5-10 minutes, at home). To maintain consistency of data gathering procedures, and to increase the follow up sample, a reminder postcard was mailed approximately two weeks after the letter (see Appendix F). An additional 20 students responded to this reminder. Follow up phone

calls were also made to nonresponding members of this group. Reasons for lack of success in contacting students or lack of participation were similar to those of the experimental group. After the phoning period, a total of 50 control group responses had been obtained, a sample considered sufficient by the writer for the follow up component of the study.

To complete the data required by study, the following were obtained from student records: grade point average, and number of credits enrolled and completed. These data items were collected for students in the initial experimental and control samples.

Appendix G is a timetable of the data collection activities.

Method of Analysis

This study was conducted using an experimental research design. However, the nature of the subject matter and the lack of specific research in the area necessitate that the study be viewed as primarily descriptive and exploratory, rather than seeking to draw definitive conclusions. Thus, the hypothesis testing procedure was used mainly to assist in focusing on specific areas of interest for discussion.

Six hypotheses were constructed to guide the study. The hypotheses and corresponding methods of analysis were as follows:

Hypothesis I. There will be a significant positive relation between taking the CPASI and participation in follow up activities (courses and services).

Method of analysis. A chi-square test of the frequencies of students in the control and experimental samples who (a) took, planned to take, or did not take personal development and study skills courses; and (b) used or did not use available services. In addition, number of times of use of service was analyzed.

Hypothesis II. There will a significant difference in mean grade point averages between students taking and those not taking the CPASI.

Method of analysis. Analysis of variance was used to compare mean grade point averages of the two samples.

Hypothesis III. There will be a significant positive relation between taking the CPASI and completion of college coursework.

Method of analysis. A chi-square test of completion or non-completion of the first two semesters of college of the control and experimental samples.

Hypothesis IV. There will be a significant positive relation between CPASI test scores and self ratings of need levels.

Method of analysis. Correlational analysis was used to compare CPASI scores and interview scores on each of the six scales.

Hypothesis V. There will be a significant change in need levels, as reflected by CPASI scores, over one semester of college.

Method of analysis. Paired t-test analysis for experimental group students, in each of the six scales.

Hypothesis VI. There will be a significant difference in need levels between students taking the CPASI and students not taking it, after one semester of college.

Method of analysis. Two-sample t-test analysis of need levels of control and experimental groups.

Whereas the large initial samples were selected using random procedures, the follow-up samples were affected by

subject mortality. To analyze the possible bias due to this factor, a sample comparison on the following variables was performed: sex, age, type of program of study, and reading scores.

In addition, analysis of variance was performed to examine the interaction of certain student characteristics and academic performance and retention. Relationships were also sought between test scores and student characteristics.

Observations were also made on the need levels of community college students in the six designated areas, before and after one semester of college, and according to their demographic characteristics.

C H A P T E R I V

ANALYSIS AND INTERPRETATION OF THE DATA

Analysis of the Data

The analysis of the data was divided into four main parts: Part I, Comparison of the Follow-up Samples; Part II, Hypotheses; Part III, Analysis of Variance; Part IV, Needs Analysis; and Part V, Other Analyses.

Given the exploratory nature of the study, a probability level of p=.10 will be acceptable for suggesting significant differences between groups; however, a level of p=.05 will be preferred for determining statistical significance of differences.

Part I. Comparison of the Follow-up Samples

The initial experimental and control groups were selected using random sampling procedures. Due, however, to subject mortality or attrition through the follow-up phase, samples were considerably reduced. Therefore, to check on the adequacy of the follow-up samples, comparison of the two groups on the following variables was performed: sex, age, type of program, and reading scores.

The results, shown in Table 1, demonstrate that, in general, the two groups were well matched with respect to these characteristics. With respect to sex, a chi-square test showed no significant difference between the samples, although in both samples females outnumbered males.

Analysis of variance of the mean ages of the two groups, however, did show that students in the experimental group were significantly older than control students ($F=6.05$, d.f.=1, 95, $p<.05$).

Table 1

COMPARISON OF FOLLOW-UP EXPERIMENTAL AND CONTROL SAMPLES ON CERTAIN DEMOGRAPHIC AND ACADEMIC CHARACTERISTICS

(N Experimental = 47
N Control = 50)

Variable	Group	
	Experimental	Control
Sex (percentages)		
Female	62	54
Male	38	46
Mean age	23.7*	20.6
Type of program (percentages)		
Career	55	66
Transfer	45	34
Mean reading scores[a]	34.2	32.3

[a]Maximum possible score was 50.
*$p<.05$

Regarding type of program in which students enrolled, that is, career or transfer, groups were also well matched. A chi-square test revealed no significant difference between the groups with respect to choice of type of program.

The final variable on which groups were compared was reading scores, on the Reading Comprehension component of the Descriptive Tests of Language, published by The College Board. Analysis of variance comparison of these scores showed no significant difference between the groups.

Part II. Hypotheses

Hypothesis I. There will be a significant positive relation between taking the CPASI and participation in follow up activities (courses and services).

The purpose of this hypothesis was to examine the effectiveness of the CPASI process in reaching one of its primary goals, that of directing students to personal development and study skills courses and services. During the follow-up, experimental and control students were asked about their use of services and enrollment or planned enrollment in target courses. The vehicles employed to obtain this information were the structured

interview for the experimental group and the mailed questionnaire for the control group. In addition, students were asked to rate the services they used. Since there are two categories of follow up activities addressed by Hypothesis I, the results have been divided into (a) use of services, and (b) enrollment in courses.

Table 2 refers to the use of services of the experimental and control students by indicating percentage of usage of the five services considered most important in students' academic, career, and personal development: the Counseling Center, the Academic Skills Center, other tutoring services, the Student Life Office (includes student activities, athletics, and Women's Center), and faculty advisor. While the college offers a number of additional services to students, the writer considered the ones included to be most directly related to the areas of interest to the study.

Table 2 shows that a higher percentage of experimental students used the Academic Skills Center and other tutoring services than did control students, while the latter had a slightly higher use of Counseling Center and faculty advisor services, but these differences were not significant. Use of Student Life services was the same for both groups, having the lowest overall percentage of use, while faculty advisors had the highest overall

percentage of use. Use of faculty advisors at least once a semester is of a quasi-mandatory nature at North Shore Community College. The results of the analysis show that, for the most part, students do in fact see their faculty advisors at least once a semester. Therefore, this service will be excluded from the analysis of hypothesis I with respect to use of services.

The overall percentage of experimental students using one or more services was 74 and the percentage of control students was 58. This result suggests a significant difference in use of services between the groups ($X^2=2.94$, d.f.=1, $p<.10$). Therefore, the null hypothesis is rejected, and it is concluded that experimental students used services more often than control students.

Viewing the total use of services, it was found that the average number of students using each service was 37.4, or 38% of the students questioned. Excluding faculty advisors, the average number of students using each service was 26, or 27% of the entire sample.

Table 2

PERCENTAGES OF USE OF SERVICES DURING THE FIRST SEMESTER OF COLLEGE

(N Experimental = 47
N Control = 50)

Service	Experimental	Control
Counseling Center		
1-2 uses	28	26
3-5 uses	15	18
6-10 uses	0	2
More than 10 uses	0	0
Total using	43	46
Academic Skills Center		
1-2 uses	6	10
3-5 uses	9	4
6-10 uses	6	2
More than 10 uses	4	2
Total using	25	18
Other tutoring		
1-2 uses	4	8
3-5 uses	13	14
6-10 uses	11	4
More than 10 uses	13	8
Total using	41	34
Student Life		
1-2 uses	6	4
3-5 uses	0	2
6-10 uses	2	2
More than 10 uses	0	0
Total using	8	8
Faculty advisor		
1-2 uses	58	56
3-5 uses	21	26
6-10 uses	0	4
More than 10 uses	6	0
Total using	85	86

Students responding to the question on use of services were also asked to rate their satisfaction with these services, on a scale of 1=low to 5=high. Table 3 shows the mean ratings received by each of the services included in the study.

Ratings of services were generally high, and while the mean ratings of experimental students was higher in every case than those of control students, none of these differences were statistically significant.

Table 3

MEAN RATINGS OF SATISFACTION WITH SERVICES

(N Experimental = 47
N Control = 50)

Service	No. Rating	Mean Rating[a] Experimental	Control
Counseling Center	44	4.29	4.04
Academic Skills Center	17	4.08	3.80
Other tutoring services	36	4.16	3.88
Student Life	8	4.25	4.00
Faculty advisor	82	4.13	3.98

[a]Based on a scale of 1=low and 5=high.

Hypothesis I also related enrollment in personal development and academic skills development courses to taking the CPASI. The data for this hypothesis was collected through the interview (section 5) and the questionnaire (section 4) for the follow up sample, and by inspection of student records for the remaining students. Students had three choices concerning their enrollment in courses: (a) took or presently am taking one or more courses; (b) might take or plan to take one or more courses; and (c) have not taken and do not plan to take any courses.

Table 4

PERCENTAGES OF ENROLLMENT IN PERSONAL AND ACADEMIC SKILLS DEVELOPMENT COURSES BY EXPERIMENTAL AND CONTROL GROUPS

(N Experimental = 47
N Control = 50)

Response	Experimental	Control
Took or presently taking one or more courses	30	36
Might take or plan to take one or more courses	42	48
Have not taken and do not plan to take any courses	28	16

Also of interest were the responses of those students who took the CPASI and scored high enough to receive recommendations to take courses, compared with those of students with low scores and no specific recommendations.

Tables 4 and 5 provide data concerning students' responses to questions about their enrollment or planned enrollment in courses. Table 4 shows percentages of students selecting each of the three choices. These data indicate that actually more control students enrolled and planned to enroll in courses than experimental students. However, the chi-square test shows that this difference was not significant. Table 5 groups students selecting choices (a) and (b), that is, students who already enrolled and those planning to enroll in courses. This was done because many students are not able to fit the courses in their first semester, but nonetheless intend to sign up at a later time. In addition, Table 5 divides experimental students between those that received specific recommendations based on their CPASI results (26%) and those that received no recommendations (74%), to analyze whether or not receiving recommendations had an effect on students' behavior. The results show that receiving or not receiving recommendations to take courses did not significantly affect students' enrollment or planned enrollment in courses.

Table 5

PERCENTAGES OF ENROLLMENT IN PERSONAL AND ACADEMIC DEVELOPMENT COURSES FOR EXPERIMENTAL AND CONTROL GROUPS

(N Experimental = 47, N Control = 50)

Response	Experimental[a]		Control
	Recommend.	No Recommend.	
Enrolled or plan to enroll	83	69	84
Not planning to enroll	17	31	16
Totals	26	74	100

[a]Recommendations were given to students with scores of 8 or higher, with a maximum possible of 15.

Based on the above, the null hypothesis relating to enrollment in personal and academic development courses could not be rejected, and it was concluded that experimental students did not enroll in these courses more often than control students. In summary, the analysis of hypothesis I showed that experimental students used more support services but did not enroll in more personal development courses than control students.

Hypothesis II. There will be a significant difference in mean grade point averages between students taking (experimental) and those not taking (control) the CPASI.

The data collection for this hypothesis involved obtaining students' grade point averages from records stored in the college's computer at the conclusion of the students' first and second semesters.

Results of this hypothesis were analyzed both for the initial sample, that is, those that had the benefit of random selection during the Assessment/Orientation/ Registration program, and for the follow up sample, those that participated in the follow up activities at the end of one semester.

Table 6 presents the results of the one-way analysis of variance performed on the mean grade point averages of the experimental and control groups, using the initial large samples. The criterion for inclusion of students in this analysis was completion of one credit or more. Students having completed no credits did not have a grade point average and therefore were excluded from the analysis.

Table 6 shows that the mean grade point average of the experimental students was higher than the mean grade

point average of the control students; however, this difference was not significant.

The null hypothesis, therefore, of no significant differences, could not be rejected based on the analysis of the initial random sample. Results of the analysis of the follow-up sample are also included to illustrate the effect of subject attrition on the results.

Table 6

COMPARISON OF MEAN CUMULATIVE GRADE POINT AVERAGES AFTER TWO SEMESTERS (INITIAL SAMPLE)

(N Experimental = 188
N Control = 82)

Group	Mean Grade Point Averages
Experimental	2.65
Control	2.58

Table 7 is a comparison of cumulative grade point averages for the follow-up samples. It should be noted that in the case of this smaller follow-up sample, all students had completed one or more credits during each of their first two semesters of college. This fact suggests that an important factor affecting sample attrition was

students' general motivation and conscientiousness toward college. While randomness was lost for both samples during the follow-up phase due to the voluntary nature of participation, the more involved follow-up activity for the experimental group most likely elicited responses from more conscientious students than the follow-up activity for the control group.

Table 7

COMPARISON OF MEAN CUMULATIVE GRADE POINT AVERAGES AFTER ONE AND TWO SEMESTERS (FOLLOW UP SAMPLE)

(N Experimental = 47, N Control = 50)

Semester	Mean Grade Point Averages Experimental	Control
First	2.90*	2.57
Second	2.87*	2.55

*$p < .05$

This is demonstrated through the results of the one-way analysis of variance, which showed the experimental group having a significantly higher mean grade point average for both the first and second semesters ($F=5.12$, $d.f.=1,95$, $p<.05$ and $F=4.79$, $d.f.=1,95$, $p<.05$).

Hypothesis III. There will be a significant positive relation between taking the CPASI and completion of college coursework.

The data for the analysis of hypothesis III was collected by inspection of student records at the completion of two semesters of college. The results presented in Table 8 indicate that higher percentages of experimental students completed two semesters. Results of a chi-square test show that the difference in completion rate was significant between the groups ($X^2=5.32$, $d.f.=1$, $p<.05$). A chi-square test was also performed on frequencies of students from the initial sample returning for a second semester. The results suggest that experimental students reenrolled for a second semester at a higher rate than did control students ($X^2=2.76$, $d.f.=1$, $p<.10$).

Table 8 also reveals the dropout or non-completion rates for one and two semesters. At the end of the first semester, 9% of the experimental students and 14% of the

control students had dropped out, and by the end of the second semester, these percentages increased to 26% and 40% respectively.

Based on the above analysis of the data relating to hypothesis III, the null hypothesis was rejected and it was concluded that experimental students were more likely to complete college coursework than control students.

Table 8

PERCENTAGES OF FREQUENCY OF COMPLETION OF THE FIRST AND SECOND SEMESTERS

(N Experimental = 206
N Control = 91)

Semester	Experimental	Control
First Semester		
Completed	91	81
Did not complete	9	14
Second Semester		
Completed	74	60
Did not complete	26	40

Hypothesis IV. There will be a significant positive relation between CPASI scores and self ratings of need levels.

The data for this hypothesis was obtained from CPASI test and retest scores (available only for the follow up sample), from Section 2 of the structured interview. The results of the data analysis are presented in Table 9 in two columns. The first column shows the correlations of initial CPASI test scores with students' ratings when asked to state their level of concern "before this semester started," during the interview. The second column shows correlations of CPASI retest scores (after one semester) with students' ratings when asked to state their level of concern "now." It should be noted that a response bias may have existed with this retrospective question, in that some students may have felt pressure to give different "before this semester started" and "now" ratings.

While all the relations are positive, there is a wide range in the size of coefficients. With the exception of the decision making area, all of the correlations after the first semester are higher than those before the first semester. Since students retested on the CPASI and answered the interview questions on the same day, it was expected that these correlations would be high. The significance of the correlations varies, but with the highest acceptable probability level of $p<.10$, it can be concluded that the correlations between CPASI scores and

direct questioning were significant in three areas before the first semester (career development, stress management, and reading and study skills). After the first semester, correlations were generally higher and were significant in four areas (career development, stress management, self awareness, and reading and study skills). Correlations were lowest at both times in the areas of interpersonal communications and decision making.

Thus, the null hypothesis was rejected for three areas, career development, stress management, and reading and study skills. It was concluded that there was a significant positive relation between CPASI scores and self ratings in these areas, whereas a significant relation could not be found in the remaining areas.

Tables 10 and 11 show all of the correlations between CPASI scores and self ratings. The diagonal in each table shows the correlations between the CPASI score and the corresponding self rating. The general conclusion that can be drawn by inspecting these tables is that CPASI scores and self ratings are related. Another aspect that can be analyzed using this data is the ability of the CPASI to differentiate among the six areas. The question to be asked in this respect is whether the CPASI merely measures a level of "generalized need" or whether it actually distinguishes between the areas. If the latter

were true, the correlations on the diagonal would be higher than each of the other correlations in each column.

Table 9

CORRELATION COEFFICIENTS BETWEEN CPASI SCORES AND CORRESPONDING SELF RATINGS BEFORE AND AFTER THE FIRST SEMESTER

(N=47)

Area	Correlation Coefficient Before 1st Semester	After 1st Semester
Career development	.3972***	.4300***
Decision making	.2207	.1844
Stress management	.2671*	.3479**
Self awareness	.2286	.3185**
Interpersonal communications	.0539	.1366
Reading and study skills	.4662****	.5070****

*p<.10 **p<.05 ***p<.01 ****p<.001

In Table 10, correlations are highest on the diagonal only in the areas of career development and reading and study skills, while in Table 11, self awareness is also highest on the diagonal. Other observations are that decision making need is highly correlated with career development need and reading and study skills need, and

that, in general, correlations are significant between most areas and the reading and study skills area.

Table 10

CORRELATION COEFFICIENTS BETWEEN CPASI SCORES AND SELF RATINGS BEFORE THE FIRST SEMESTER

(N = 47)

SELF RATINGS[a]	CPASI SCORES[a]					
	1	2	3	4	5	6
1	.3972**	.5078***	.2686	.2496	.0669	.3045*
2	.1379	.2207	.1203	.0992	.1647	.3022*
3	-.0745	.1347	.2671	.1762	.3107*	.3108*
4	.2288	.2937*	.2724	.2286	.2386	.3300*
5	.0000	.1469	-.0770	-.0163	.0539	.1483
6	.1551	.4033**	.3342*	.2601	.2857	.4662***

[a]Areas:
1. Career development
2. Decision making
3. Stress management
4. Self awareness
5. Interpersonal communications
6. Reading and study skills

*p<.05 **p<.01 ***p<.001

Table 11

CORRELATION COEFFICIENTS BETWEEN CPASI SCORES AND SELF RATINGS AFTER THE FIRST SEMESTER

(N = 47)

SELF RATINGS[a]	CPASI SCORES[a]					
	1	2	3	4	5	6
1	.4300**	.3837**	.0799	.0999	.0235	.1908
2	.1044	.1844	.1643	.1406	.2226	.2662
3	.0275	.1284	.3479*	.0988	.3102*	.3149*
4	.2988*	.2972*	.1663	.3185*	.1878	.2456
5	.0474	.1189	.0319	.1318	.1366	.1855
6	.0369	.3484*	.4021**	.1749	.3368*	.5070***

[a]Areas: 1. Career development
2. Decision making
3. Stress management
4. Self awareness
5. Interpersonal communications
6. Reading and study skills

*p<.05 **p<.01 ***p<.001

Hypothesis V. There will be a significant change in need levels, as reflected by CPASI scores, over one semester of college.

This hypothesis compared initial CPASI scores with those obtained after the first semester. Table 12 shows the results of the paired t-test analysis of this data. In each area, needs were higher before the semester than after. However, these differences were significant only in the areas of career development ($p<.10$), self awareness, and reading and study skills ($p<.01$).

Table 12

COMPARISON OF MEAN NEED SCORES BEFORE AND AFTER THE FIRST SEMESTER, AS INDICATED BY CPASI SCORES

(N=47)

Area	Mean Scores Before 1st Semester	After 1st Semester
Career development	4.47*	3.96
Decision making	3.40	3.06
Stress management	3.06	2.74
Self awareness	2.17**	1.60
Interpersonal communications	2.45	2.08
Reading and study skills	4.53**	3.34

*$p<.10$ **$p<.01$

The null hypothesis, therefore, was rejected for the areas of career development, self awareness, and reading and study skills, and it was concluded that there was a significant change in need levels in those areas over one semester of college. The results did not justify rejection for the areas of decision making, stress management, and interpersonal communications.

Hypothesis VI. There will be a significant difference in need levels between students taking the CPASI and a control group, after one semester of college.

The data for the analysis of hypothesis VI was obtained through the structured interview (experimental) and the questionnaire (control) rather than through CPASI scores, since control students did not have these. A t-test was performed comparing mean ratings of experimental and control students' self-perceptions of their needs in each of the six areas after one semester of college (Section 2 in interview, Section 1 in questionnaire).

The results, presented in Table 13, indicate that while the mean ratings of experimental students were lower in all of the areas than those of control students, these differences were significant only in two, career development and decision making ($p<.05$). Overall highest

need levels were expressed in the areas of reading and study skills and career development.

Table 13

COMPARISON OF MEAN NEED LEVELS OF STUDENTS TAKING AND NOT TAKING THE CPASI, AFTER ONE SEMESTER OF COLLEGE

(N Experimental = 47, N Control = 50)

Area	Mean Experimental	Mean Control
Career development	3.02	3.55*
Decision making	2.49	2.97*
Stress management	2.72	3.14
Self awareness	2.83	3.08
Interpersonal communications	2.77	3.06
Reading and study skills	4.23	4.78

*$p < .05$

The analysis of hypothesis VI leads to the rejection of the null hypothesis for the areas of career development and decision making, and the conclusion that experimental students had lower need ratings in those two areas. The analysis did not justify rejecting the null hypothesis in the remaining areas.

This concludes the analysis of the data with regard to the results of the hypotheses.

Part III. Analysis of Variance

In this section, analysis of variance will be used to examine the interaction of various factors with the outcome variables; namely, cumulative grade point averages, completion of coursework, use of services and enrollment in courses. For the sake of brevity, only those results that were significant will be reported.

Figure 1 shows that although there was no significant difference between students who did not use services, experimental (E) students who did use services had significantly higher grade point averages than did control (C) students who used services ($F=3.3$, d.f.=1, 266, $p<.10$).

Figure 2 demonstrates the patterns of completion of two semesters of college and group, as they affected grade

point averages. Experimental students who completed two semesters had significantly higher grade point averages than those that did not complete two semesters, whereas the averages of control students did not vary with completion of coursework ($F=3.6$, $d.f.= 1,265$, $p<.10$). Thus, experimental students who dropped out tended to be those with lower averages, but the drop out rate of control students was not affected by their averages.

Figure 1. Use of Services x Group Interaction, Grade Point Averages

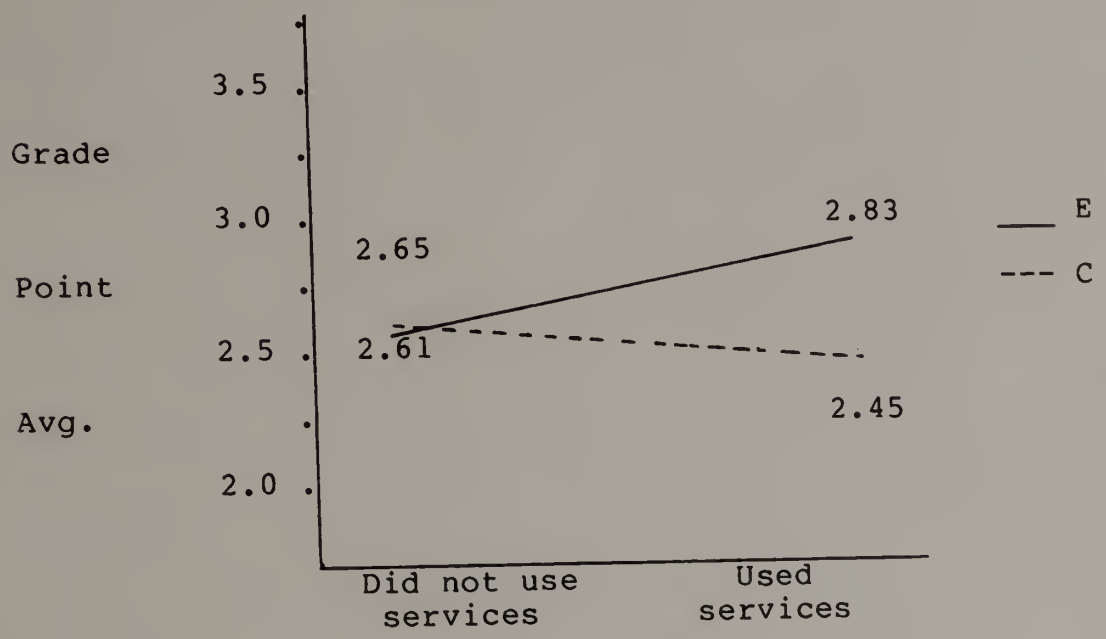

Figure 2. Completion of Two Semesters of College x Group Interaction, Grade Point Averages

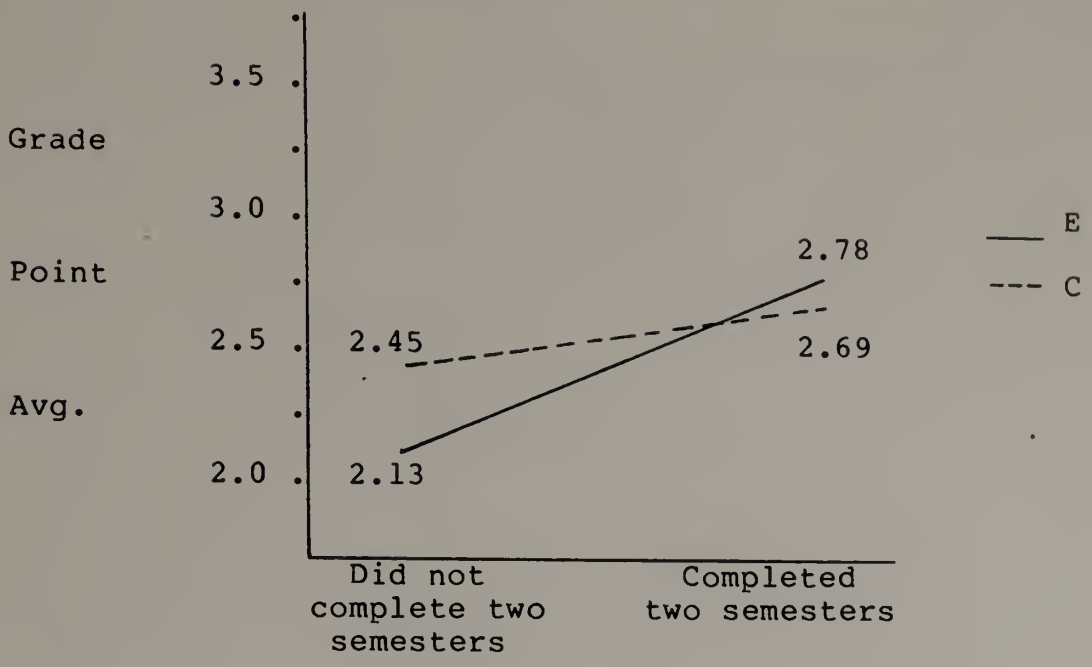

Figure 3 illustrates the effect of sex and group on grade point averages. In general, the averages of females were significantly higher than those of males ($F=13.2$, $d.f.=1,237$, $p<.001$). While female control and experimental students did not differ significantly in their grade point averages, control males showed a significantly lower mean average than experimental males ($F=3.9$, $d.f.=1, 237$, $p<.05$). Figure 4 relates grade point average and group to age. It shows that, in general, averages increased with age. However, older control students had significantly higher grade point averages than older experimental students ($F=2.7$, $d.f.=2,253$,

p<.10), although the variance for experimental students was more linear, that is, averages increased gradually with age.

Figure 3. Sex x Group Interaction, Grade Point Averages

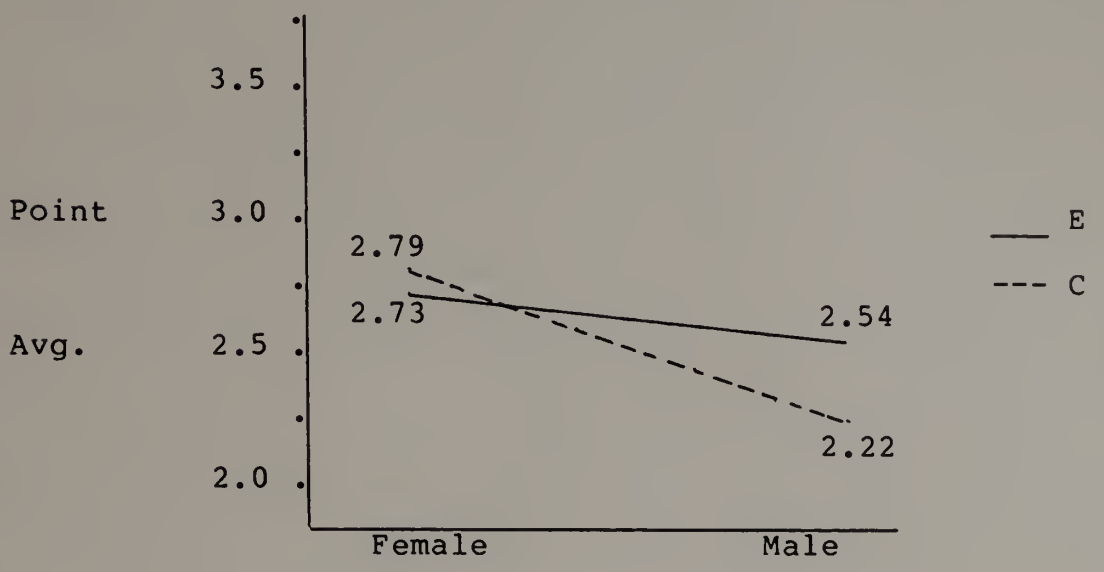

Figure 4. Age x Group Interaction, Grade Point Averages

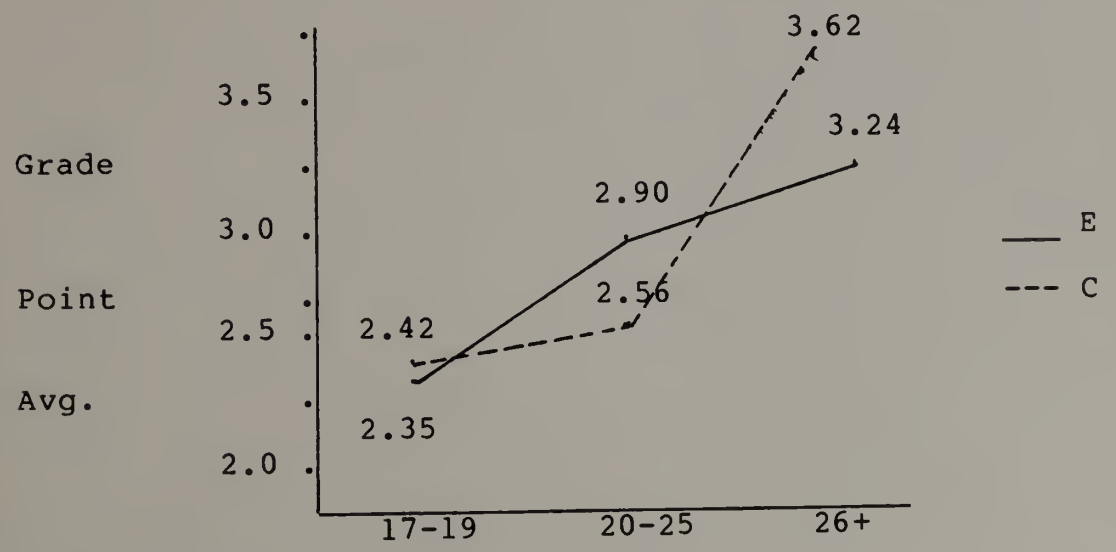

Figure 5. Age x Type of Program Interaction, Grade Point Averages

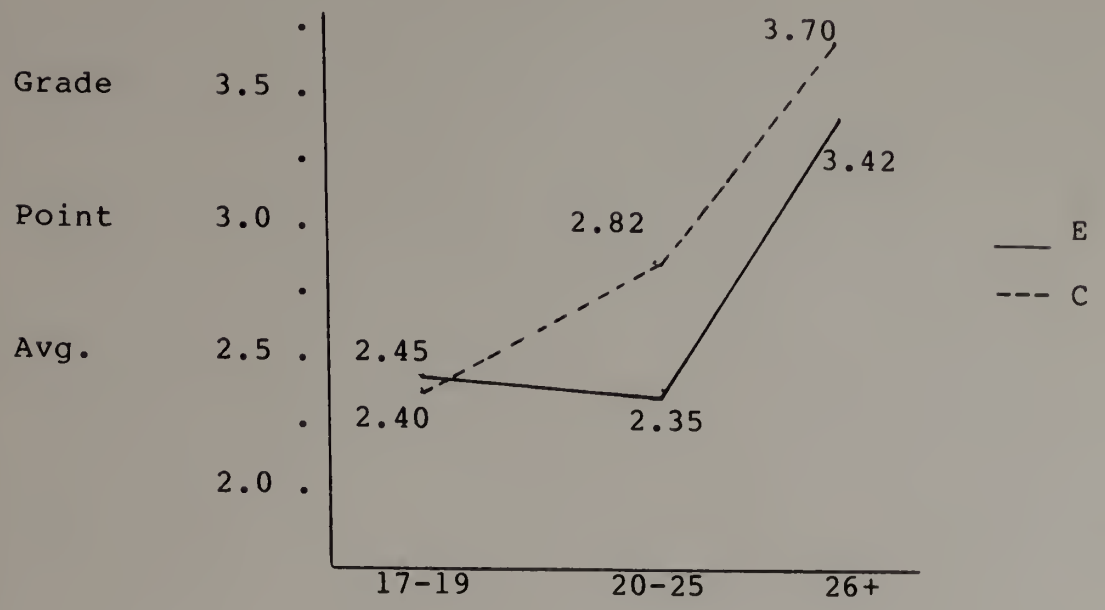

Figure 5 shows the interaction of type of program and age with grade point averages. Career students in the two older age groups had significantly higher grade point averages than did their counterparts in transfer programs ($F=3.5$, d.f.$=2,237$, $p<.05$). There was no difference between younger students; in both cases, their averages were lowest.

Part IV. Needs Analysis

One of the purposes of the present study was to gather data on career, personal, and study skills needs of community college students. The review of the literature demonstrated that very little is known about these areas and that more studies are needed (Cross, 1968). The six areas selected for inclusion in the CPASI have been documented as being of particular relevance to community college students, both by previous research and experience at North Shore Community College.

This section of the data analysis examines students' need levels, in the six areas, according to student characteristics such as sex, type of program of study, and age. It also examines the change in need levels over one semester.

Table 14 shows the mean need levels as reflected by CPASI scores, by sex. None of the mean differences were significant, and this result also applies to CPASI retest scores and self ratings after one semester. The only exception was in the area of career development, where males' self ratings after one semester were significantly higher than those of females ($t=-2.38$, $d.f.=95$, $p<.05$).

Regarding areas of high and low need, Table 14 also shows similarities between males and females: both sexes

had highest needs in the areas of career development and reading and study skills; lowest needs for both groups were in self awareness and interpersonal communications.

Table 14

COMPARISON OF MEAN CPASI SCORES BEFORE FIRST SEMESTER, BY SEX

(N Females = 29
N Males = 18)

Area	Mean[a] Female	Male
Career development	4.17	4.94
Decision making	3.17	3.68
Stress management	3.24	2.78
Self awareness	2.10	2.28
Interpersonal communications	2.55	2.28
Reading and study skills	4.72	4.22

[a]Maximum possible score is 15.

Table 15 is a comparison of mean CPASI scores by type of program of study. These results show significantly higher career development ($p<.10$) and decision making ($p<.05$) needs among transfer students than among career students.

Table 15

COMPARISON OF MEAN CPASI SCORES BY TYPE OF PROGRAM

(N Career = 26
N Transfer = 21)

Area	Mean Career	Transfer
Career development	3.70	5.33*
Decision making	2.74	4.19**
Stress management	2.69	3.52
Self awareness	1.96	2.43
Interpersonal communications	2.04	2.95
Reading and study skills	4.19	4.95

*p<.10 **p<.05

Tables 16 and 17 show mean levels before and after the first semester in each of the six areas by age groups, according to CPASI scores. The results show a wide range of need levels among the age groups, and the age group with the highest rating varies from area to area. However, students of all age groups received the highest need scores in career development and reading and study skills both before and after one semester. Concerning change over one semester, need levels decreased in all six areas

for the 17 to 19 group and the 20 to 25 group, whereas among the oldest students need levels increased in four of the six areas.

Table 16

MEAN NEED LEVELS BEFORE FIRST SEMESTER BY AGE GROUPS

(N = 47)

AGE GROUPS	N	MEAN CPASI SCORES[a]					
		1	2	3	4	5	6
17 - 19	16	4.31	3.44	3.06	2.25	2.50	4.44
20 - 25	20	4.75	3.50	3.00	2.25	2.60	4.55
26 and over	11	4.18	3.18	3.18	1.91	2.09	4.64

[a]Areas:
1. Career development
2. Decision making
3. Stress management
4. Self awareness
5. Interpersonal communications
6. Reading and study skills

Table 17

MEAN NEED LEVELS AFTER FIRST SEMESTER BY AGE GROUPS

(N = 47)

AGE GROUPS	N	MEAN CPASI SCORES[a]					
		1	2	3	4	5	6
17 - 19	16	3.50	3.06	2.31	1.19	1.75	3.63
20 - 25	20	4.10	2.95	2.90	1.70	2.15	3.20
26 and over	11	4.27	3.27	3.09	2.00	2.27	3.48

[a]Areas: 1. Career development
2. Decision making
3. Stress management
4. Self awareness
5. Interpersonal communications
6. Reading and study skills

Table 18 shows that need levels before and after the first semester were highly correlated ($p<.001$), whether measured by the CPASI or through direct questioning. That is, students' need levels before the first semester were correlated to their needs after the semester, although the results of hypothesis V showed that the means changed significantly in three areas.

Table 18

CORRELATION COEFFICIENTS BETWEEN NEED LEVELS BEFORE AND AFTER FIRST SEMESTER

(N Direct Questioning = 97
N CPASI = 47)

Area	Correlation Coefficient CPASI	Direct Questioning
Career development	.7650*	.6104*
Decision making	.7279*	.6302*
Stress management	.7164*	.5443*
Self awareness	.6346*	.6550*
Interpersonal communications	.6308*	.6912*
Reading and study skills	.5728*	.5736*

*p<.001

Part V. Other Analyses

This section will examine the data collected in the study which is of a more subjective nature, including students' opinions about the CPASI, their ability to recall the recommendations they received after initially taking the CPASI, and their ideas about additional areas the CPASI might include.

Table 19 indicates the mean responses to four questions asked to experimental students during the structured interview concerning their opinions about the CPASI. It shows that students generally had a positive reaction to the CPASI. The clarity of purpose of the instrument was somewhat clear diromg the initial testing, but it became clearer during the retesting.

Table 19

MEAN RESPONSES TO QUESTIONS OF OPINION ABOUT THE CPASI

(N = 47)

Question	Mean Response[a]
1. Clarity of purpose of CPASI during initial testing	3.08
2. Clarity of purpose of CPASI after retesting	4.30
3. Helpfulness of CPASI in gathering your thoughts and/or finding what the college had to offer	3.45
4. Level of comfort taking CPASI during initial testing	3.63

[a]Based on scale of 1=low and 5=high.

Table 20 shows experimental students' responses to question 6 of the interview, in which they were asked if they remembered the recommendations received on the initial CPASI, if any. The responses to this question indicate that most students did remember their CPASI results, but of those that received specific recommendations, only 31% said they had followed them.

Table 20

PERCENTAGES OF STUDENTS REMEMBERING AND FOLLOWING CPASI RECOMMENDATIONS

(N = 47)

Question	Response Yes	No
Do you remember initial CPASI results?	86	14
Did you follow CPASI recommendations?	31	69

Section 3 of the structured interview and Section 2 of the questionnaire was an open question asking students to mention any others areas, not addressed by the CPASI, with which they considered North Shore Community College should be of assistance to them. Seventy-six percent of the respondents felt that there were no additional areas

of concern. Among the responses given, many overlapped with the CPASI areas (job placement, career planning, social events, learning who I am, learning to interact with people, adapting to college).

The following is a summary of students' responses, organized by categories:

Administrative issues

- Parking (3)
- Theft/vandalism
- Financial aid
- Scheduling conflicts

Career development issues

- Job placement (5)
- Transferring credits (4)
- Career planning

Personal development issues

- Adjusting to college, post orientation or reentry seminar (3)
- Opportunity to find out who I am
- Learning to interact with people
- Social events
- Time management

Academic issues

Learning to write essays

There was some overlap between these responses and areas already addressed by the CPASI, indicating that students may have mentioned issues of immediate concern during the questioning. These responses also suggest that students have difficulty relating general areas to specific problems they are experiencing.

Interpretation of the Data

The purpose of this study was to evaluate an existing process for assessment of career, personal, and study skills of North Shore Community College students. The principal vehicle for this process is an instrument, the Career, Personal, and Academic Skills Inventory (CPASI), designed expressly to measure students' needs in six predetermined areas considered of primary importance to community college students. The study attempted to examine the effectiveness of the process in (a) identifying students' needs, and (b) in connecting students with appropriate courses and services. An additional goal was to increase the knowledge about the needs of the population with respect to certain demographic characteristics.

The methodology employed to carry out the study was an experimental research design. Experimental students, who completed the CPASI during the freshman orientation program prior to their first semester of college, were compared with a control group undergoing a traditional orientation process in which a counselor merely explained the courses and services available and recommended students take advantage of these. After one semester of college, follow-up activities involved a retest of the CPASI and a structured interview for experimental students, and a mailed questionnaire for control students. The design of the interview and questionnaire were similar, and their purpose was to gather information on students' self ratings of their needs, their use of services, and their enrollment in certain target courses during their first semester of college.

To carry out the study, six hypotheses were stated and additional research questions were posed. The results of the study partially supported the hypotheses. A detailed interpretation of the results is the subject of this section of the study.

Part I. Hypotheses

Hypothesis I. There will be a significant positive relation between taking the CPASI and participation in follow up activities (courses and services).

The results of this hypothesis indicated that taking the CPASI significantly increased students' use of services, although not their enrollment in personal development courses. Perhaps more surprisingly, among those students who took the CPASI, those receiving specific recommendations for courses based on their high scores did not take courses in significantly higher numbers than those that did not receive recommendations. This result has several possible interpretations. It may mean that students act primarily on their self perceptions rather than on test results. This interpretation would be compatible with the finding of a follow-up study of students who received recommendations to enroll in certain specific math and English courses based on test results. This study showed that students often disregard recommendations in favor of their self assessments (Kaplan & German, 1983). Or it may be an indication that although students may agree on need areas, this awareness may not be high enough to influence their behavior. This possibility will be discussed in greater depth in

hypothesis IV, which compares CPASI scores with self ratings. Another possible explanation is that a 15-minute instrument with a 15-20 minute scoring and interpretation session in groups of 15-30 (depending on size of program of study) are not sufficient to make an impact on students' behavior.

Data on the use of services by students is also worth mentioning. Most students saw their faculty advisors at least once during the semester because of the quasi-mandatory nature of this visit prior to registering for the next semester. This result shows that the faculty advisor system is successful, at least in terms of students making contact at least once in the semester. However, when viewing voluntary use of services, a more accurate analysis should exclude faculty advisors. What is the desirable rate of use of services for a community college population? While the literature shows that this population has a high need for services of both an academic and personal nature, the fact that students commute to college and have other responsibilities is a deterrent to participation in extra-curricular activities. The percentage of students using one or more services (66%) and the average number of students using each service (27%), gives a general indication of the use. While these figures show that support services are

definitely utilized by students, there are strong indications (such as dropout rates, and need levels) that services are underutilized.

Students generally had a positive response to the services they received, and tended to rate these services highly. Experimental students tended to consistently rate services higher than did control students, although these differences were not significant. A possible explanation for the overall high ratings is that students are pleasantly surprised to find the high level of services available at a community college, which may not have been the case in previous educational institutions. Since this question was asked by a member of the Counseling Center, a bias in favor of that service may have been expected, but not necessarily in favor of other services. In fact, the average rating of the Counseling Center was the highest, but the other services were very closely behind. This would seem to indicate that students in fact had a high opinion of the quality of the services they used.

Hypothesis II. There will be a significant difference in mean grade point averages between student taking (experimental) and those not taking (control) the CPASI.

Although a significant difference was found in the smaller follow-up group, the hypothesis was not supported by the data of the large random group. This discrepancy demonstrates a weakness in the research design, in which the more demanding follow-up activities of the experimental group naturally selected the more conscientious student, whose grade point average was higher than the student who chose not to participate. The follow-up activity of the control group was less demanding, i.e. to complete a 5-10 minute survey and return it by mail. This explanation is further supported by the different attrition rates of the experimental and control groups through the follow-up phase (77% for the experimental group vs. only 45% for the control group).

In summary, the interpretation of hypothesis II is that the act alone of participating in the CPASI process was not a strong factor in determining students' grade point averages.

Hypothesis III. There will be a significant positive relation between taking the CPASI and completion of college coursework.

The results showed this hypothesis was true as it related to returning for a second semester and completing that semester. In other words, taking the CPASI appeared

to have a positive effect on students' persistence through two semesters of college. Students taking the CPASI were more likely to reenroll for a second semester and complete that semester than control students. A possible explanation for this result is that although doing equally well or poorly in school, experimental students may have had a higher awareness of the services available to help them in college than control students. As a result, those doing poor academic work may have been more willing to take personal responsibility for that situation and to give college another try, with the knowledge that the necessary support services were available.

Hypothesis III also sheds light on one of the most difficult and controversial issues surrounding community colleges: the high dropout rate. The results show that, regardless of efforts to assess students' needs and to provide appropriate services and courses, dropout rates are still high. Although with a community college population, many external circumstances affect these rates, there is strong evidence that use of college services and participation in extracurricular activities has a positive effect on student retention. Therefore, while retention figures alone do not provide answers, they raise important questions regarding effectiveness of

programs designed to address the career and personal needs of students.

Hypothesis IV. There will be a significant positive relation between CPASI scores and self ratings of need levels.

This hypothesis was an attempt to validate the scores of the CPASI with students' self perceptions, under the assumption that self perceptions have high validity. If CPASI scores are as valid or more valid than self ratings, its use provides a more efficient way of identifying student needs than individual meetings with each student.

The results suggest that the CPASI is perhaps a more accurate method of rating the more subjective areas such as decision making, self awareness, and interpersonal communications, while as effective as self ratings in the more tangible areas of career development, stress management, and reading and study skills.

In summary, hypothesis IV showed that students' self ratings were generally highly correlated with CPASI scores. However, there is a need for additional refinement and clarification to differentiate among the areas that are in fact distinct, or to consolidate those areas that continually appear to be highly correlated.

Hypothesis V. There will be a significant change in need levels, as reflected by CPASI scores, over one semester of college.

The assumption of this hypothesis is that students' needs change as a result of being in college. The reasons for this change and the factors that explain this change are more difficult to identify. The intention of the hypothesis was to relate change in need levels of experimental students with their participation in the assessment program. The results showed that in all areas experimental students' needs were lower after one semester of college, but these changes were significant only in three areas: career development, self awareness, and reading and study skills. These results seem to indicate that college helps students become more self aware, helps them with their reading and study skills, and with their career development issues. It may be important to note that, after one semester, students still show high needs in the career development and reading and study skills areas, both of which are closely related to college success.

Hypothesis VI. There will be a significant difference in need levels between students taking the CPASI (experimental) and a control group, after one semester of college.

This hypothesis was related to the previous one. Whereas hypothesis V examined before and after one semester need levels of only the experimental group, hypothesis VI attempted to find out if the changes in the experimental group were different from those changes in the control group. Since, obviously, CPASI scores were unavailable for the control group, self ratings were used to examine this hypothesis. The results showed that in fact experimental students had lower needs in all areas than control students. However, these differences were significant only for two areas, career development and decision making. Therefore, although the needs of experimental students were significantly lower in career development, self awareness, and reading and study skills after one semester than before starting college, control students changed as much in the reading and study skills area and the self awareness area. In the decision making area, while CPASI results showed that the change within one semester's time was not significant, experimental students showed a significantly lower need in this area than control students when rating themselves.

Therefore, the notion that students in college change is supported, although it appears that one semester is not enough time for significant change in a number of areas. But in the interpretation of these results, a positive sign is that students generally perceive college as helping to reduce their career, personal, and study skills needs.

Part II. Analysis of Variance

The purpose of this section of the data analysis was to examine the interaction of certain factors on the outcome variables of grade point averages, enrollment in courses, use of services, and completion of coursework.

Some noteworthy interactions were revealed by the analysis. First, students participating in the career, personal, and academic assessment program (experimental) not only used more services than did control students (Hypothesis I). In addition, those experimental students using services had significantly higher averages than control students using services. A possible interpretation is that experimental students obtained a greater benefit from the services they used than control students, that is, they used services more appropriately and to greater advantage.

Secondly, among students participating in the CPASI program, those with extremely low averages dropped out of college, but others seemed to persist at a higher rate than did students not participating in the program. Students not participating had a higher dropout rate, regardless of their averages. This result confirms the interpretation of Hypothesis III, that participation in the program enhanced students' awareness of services that could provide assistance, despite low academic performance.

Females generally had higher grade point averages than males, and males not participating in the program had significantly lower averages than males in the program. In other words, the CPASI program appeared to benefit males more than females.

With regard to age, older students generally had higher averages than younger students -- actually older students not participating in the program had the highest overall averages. However, students in the middle age group (20-25) appeared to benefit the most from participation in the program.

Finally, career students, for the most part, had higher grade point averages than transfer students, regardless of age; the lowest averages were those of transfer students in the middle age group (20-25).

Part III. Needs Analysis

This section of the interpretation of results is an attempt to examine trends and relationships between certain factors and need levels.

Sex. There were no significant differences in need levels as measured by the CPASI, by sex. This result is rather surprising, as it was expected that females would generally show higher levels. This result was consistent, regardless of the method of measurement, by CPASI or direct questioning. The only exception was in the career development area, in which males showed a significantly higher need level when rating themselves after one semester. This result would suggest that males and females attending North Shore Community College are equally aware of their career, personal, and study skills needs. Concerning levels of need, both males and females showed highest need in the areas of career development, and reading and study skills; lowest need was displayed in the areas of self awareness and interpersonal communications. This result may be interpreted as a tendency of students to report, on a college-administered inventory, higher need in areas that are relatively "safe" and that are perceived as being directly related to college achievement.

Type of program. Need levels of students were compared with the type of program in which they were enrolled, career or transfer. This analysis showed that the needs of transfer students were higher in the areas of decision making and career development than those of career students. While this result is expected, since many transfer students have not selected an area of specialization, it is surprising that the difference between the two groups is not greater, especially in the career development area, where the difference was only marginally significant. It appears that many career students also have concerns regarding career development. Decision making is an area of significant difference between the groups; the possible implication is that while career students have a lower need in the decision making area, that is, they did make a decision to enter a particular area of concentration, and their concerns about choice of career are lower than those of transfer students, they are still present and need to be addressed.

Age groups. The results of this analysis did not reveal consistent patterns, other than that students of all age groups showed highest need in the areas of career development and reading and study skills both before and after one semester. While need levels decreased in all six areas for students under 26, among the oldest students

need levels increased in four of the six areas. The decreases among older students were in the areas of stress management and reading and study skills. A likely interpretation of this result is that older students tend to be quite apprehensive about entering college, especially after being away for a number of years, although in fact they are, for the most part, very conscientious. After a semester, older students are usually able to relax and increase their confidence about their ability to succeed academically. The differences in need levels among the age groups were not significant. This result confirms the conclusion of hypothesis VI, that although students do change in college, that change is not highly apparent after only one semester.

Need levels before and after one semester. For this analysis, correlation coefficients were obtained for need levels before and after the first semester. Before and after scores on the CPASI were compared, as were self-ratings on the interview and questionnaire. While self ratings of need before the first semester had the weakness of being retrospective, that is, students at the end of the first semester were asked to rate their need before the semester started, results show that scores obtained on both instruments were highly correlated. Correlations on CPASI scores, more reliable due to the

testing before the semester and retesting after the semester appear to validate the self-rating data, in that correlations are similar regardless of the instrument employed. That is, students with high need levels before the first semester tended to have high needs after the semester and viceversa, although the mean needs of the group as a whole may have changed. This result supports the theory that personal change is gradual, and that while students do change in college, one semester is not enough time to effect substantial change.

Part IV. Other Analyses

Opinions about the CPASI. Students generally had a positive opinion of the CPASI. While its purpose was not very clear during the initial testing, it became clearer during the retesting. This result points to the need to spend some time before administering the CPASI to carefully explain its purpose. Since the CPASI is taken along with other tests with focus on an academic subject, its different nature and purpose need to be emphasized.

Recall of CPASI results. While the rate of recall was quite high, responses were probably affected by the fact that this question was asked immediately following the CPASI retesting. Therefore, students' memory was

fresher than if the question had been asked without the benefit of the retesting. One third of the students followed CPASI recommendation; while two thirds stated that they had not. This result is consistent with other evidence that students, while perceiving needs in the career, personal, and study skills areas, may not be willing to take courses which are not required in their academic program to meet these needs. As found in hypothesis I, students taking the CPASI are more likely to use a recommended service than enroll in a recommended course to address their needs.

Other areas of concern. This question tended to draw responses based on issues of immediate concern to students, such as parking and theft or vandalism. Students' mention of specific issues related to career development emphasizes the magnitude and breadth of this area. Additional responses which related to personal development areas already addressed by the CPASI seem to indicate that some students have difficulty relating the general areas of the CPASI to their specific practical concerns.

C H A P T E R V

CONCLUSION AND RECOMMENDATIONS

The purpose of this study was to evaluate a program for assessing the career, personal, and study skills needs of North Shore Community College students. The outstanding characteristic of this program is its use of an objective instrument, the Career, Personal, and Academic Skills Inventory (CPASI), developed by the writer. Specifically, the study sought to examine the success of the program in reaching the following goals: (a) to direct students to services and courses which responded to their needs; (b) to improve students' college achievement and retention; and (c) to measure students' need levels in six areas: career development, decision making, stress management, self awareness, interpersonal communications, and reading and study skills.

Six hypotheses were developed to guide the study; in addition, an analysis of need levels before and after the first semester was performed. Finally, analysis of variance was used to examine the interaction of various factors with the outcome variables.

The study was conducted using an experimental research design, which employed randomly selected experimental and control groups of entering freshmen. Experimental students were those participating in the assessment program, taking the CPASI, and receiving specific recommendations as a result. Control students participated in a traditional orientation in which support services and courses were explained, without the benefit of an assessment instrument. The initial data collection took place during the Assessment/Orientation/Registration program in August, 1982, at which time the control group (N=91) was randomly selected and excluded from the CPASI assessment; all remaining students took the CPASI, and the experimental sample was randomly selected from this group (N=206).

Follow-up activities took place after one semester of college. The purpose of these activities was to measure students' responses to the differing treatments, and to measure their need levels after one semester. For the experimental group, the follow up involved retesting on the CPASI and participating in a structured interview regarding self-perceptions of needs, use of services, and enrollment in courses. The control group received a mailed questionnaire which they were asked to complete and

return. The content of the questionnaire paralleled, whenever possible, that of the structured interview.

During the follow-up phase, both groups of students were contacted by letter and asked for voluntary participation in a study on the needs of community college students. A reminder postcard was mailed approximately 10 days after the letter. Since the initial response rates were low, phone calls were then made to nonrespondents. At the end of this process, 47 experimental students and 50 control students had responded, sample sizes considered adequate by the writer. However, for the sake of minimizing the bias due to subject mortality, whenever possible data analysis was based on the initial samples.

Three instruments were employed in the study. The CPASI is an objective inventory consisting of 50 self statements with which students are asked to either agree or disagree. After taking the inventory, students score their responses and receive an Interpretation Guide. Students with "high need" scores receive specific recommendations to participate in career, personal, and study skills development courses and services. Experimental students took this inventory twice, before and after their first semester. The second instrument was the structured interview format used with the experimental group during the follow-up phase. It included questions

on the students' reactions to the CPASI, their self-ratings of need levels before and after their first semester, their use of services and enrollment or planned enrollment in specific courses. The third instrument was the questionnaire mailed to control students during the follow-up phase. It was designed to parallel the interview questions regarding self-ratings of needs, use of services, and enrollment or planned enrollment in courses.

The data collected for the study was computerized and was analyzed using the Interactive Data Analysis Package (IDAP) of the University of Massachusetts.

Conclusion

The results of each of the hypotheses, of the analysis of variance, of the needs analysis, and of additional data are summarized as follows.

Hypotheses. Hypothesis I predicted that students participating in the CPASI program would have a higher level of participation in support services and courses than control students. The results partially supported this hypothesis, in that experimental students used significantly more services than control students, but

they did not enroll in significantly more courses. In addition, it was found that, among those students who participated in the program, receiving a specific recommendation did not significantly influence their decision to take or not to take a course. Students who did not receive recommendations enrolled in courses as frequently as students who did receive recommendations. The conclusions drawn from this hypothesis are that (a) participation in the career, per sonal, and academic assessment program does increase students' use of services but does not significantly affect their enrollment in recommended courses; and (b) students appear to rely primarily on other factors, such as self-perception of urgency of need, and time and scheduling limitations, rather than on the recommendations resulting from an instrument. Additional conclusions are that, generally speaking, students do use the services of their faculty advisors, and that their utilization of other services is probably not truly reflective of their needs and interests. Use of Student Life services is noticeably low, considering that students pay an additional fee for this service. Students' satisfaction with the services that they use is high; therefore it is suspected that other factors, such as time constraints and prejudices may limit their use.

Hypothesis II built on hypothesis I, predicting that students participating in the program would have a higher mean grade point average than those who did not. The rationale for this hypothesis was that experimental students would have a higher utilization of support services and courses, which would translate into higher grade point averages. Hypothesis II was rejected for the larger initial sample, although experimental students in the follow-up sample did have significantly higher averages. It can be concluded that students in the follow-up sample were, as a group, more conscientious than those of the initial random sample. This was demonstrated by their willingness to participate in the follow-up phase of the study which required making an appointment, whereas the control students were only asked to complete and return a mailed questionnaire. Thus, a logical conclusion is that participating in the program based on the CPASI was not sufficient to influence students' grade point averages and these were affected by other variables, such as student's conscientiousness.

Hypothesis III proposed that students participating in the CPASI program would have a higher retention rate than control students. The results supported this hypothesis, and showed that participating in the CPASI program had a positive effect on student retention through

two semesters of college. While experimental students did not necessarily do better academically than control students, their greater knowledge and utilization of support services appears to have influenced their decision to remain in college, at least through two semesters. However, the results of this hypothesis also show that the dropout rate among North Shore Community College students is considerable and deserves continued attention in terms of its relationship with the effectiveness of support services and student satisfaction.

Hypothesis IV stated that there would be a significant positive correlation between CPASI scores and self ratings of need levels. The results showed that students can most easily rate their needs in the areas of career development, reading and study skills, and stress management, but that they have more difficulty rating their needs in the more abstract areas of self awareness, decision making, and interpersonal communications. This conclusion appears to indicate that the CPASI is more effective in measuring these needs than direct questioning. Another conclusion is that students tend to have needs in more than one area simultaneously. The most recurring example of this is that students who have high career development needs often have also high reading and study skills needs. This would suggest the possibility of

an assessment process which would focus on fewer need areas, but that would probe deeper into those areas in the hopes of having a stronger influence on students' subsequent behavior.

Hypothesis V predicted that there would be a significant change in need levels, as measured by the CPASI, over one semester of college. The results showed that need levels were significantly reduced after one semester of college in the areas of self awareness, reading and study skills, and marginally, in career development. Therefore, the notion that college has a significant effect on students is supported, although the results showed that these changes are not substantial after only one semester.

Hypothesis VI predicted that experimental students would have lower need levels after one semester than control students. This hypothesis was derived from hypothesis I, in that students taking the CPASI would have a higher utilization of services and courses resulting in a greater reduction of need levels than that of control students. The results indicate that this hypothesis was true for the areas of career development and decision making. It may be concluded that the greater utilization of services by experimental students had a positive effect in these two areas.

Analysis of Variance. This part of the data analysis pointed to certain groups of students that benefitted from the career, personal, and academic assessment program, and to others that perhaps should be given more attention in the future. Students participating in the program and using support services had higher averages than other students. In addition, these students appeared to drop out of college only if their averages were extremely low; otherwise they tended to persist. Females and older students had the highest overall averages, regardless of participation in the program; males and students in the middle (20-25) age group appeared to benefit the most from participation. Career students had higher averages than transfer students, regardless of age; those with the lowest averages were transfer students in the middle (20-25) age group.

Needs Analysis. The purpose of this part of the analysis was to attempt to draw conclusions about the need levels of North Shore Community College students before and after one semester of college, and about the measurement of these needs.

Generally, there were no significant differences between the need levels of males and females in the study group. Whether measured by the CPASI or self ratings, the only exception was that males rated their career development need significantly higher than females after one semester of college. This result is somewhat surprising, since the expectation was that females would generally rate their needs as higher than would males. The most likely conclusion is that males who attend a community college are becoming more aware of and more willing to admit to their needs. Regarding high and low needs, males and females were also well matched: career development and reading and study skills were highest for both groups, and self concept and interpersonal communications were lowest for both.

According to type of program of study, transfer students showed significantly higher career development and decision making needs. In the remaining areas, students have similar need levels, regardless of the type of program in which they are enrolled. In the career development area the differences are only marginally significant, probably because many career students, while having chosen a specific career program, still have some concerns about their choice. This result points to the need to focus on both types of students and not assume

that career students, because they are in a specific program, do not have concerns in the career development area.

Students were also compared by age groups. The results show that students of all age groups displayed the highest needs in career development and reading and study skills. While the needs of students under 26 decreased in all six areas over one semester, older students' needs increased in four areas. This indicates that either older students are more honest than younger students, or that they indeed have higher needs in certain areas. Since these differences are not statistically significant, the general conclusion is that need levels to not respond to specific age patterns in a community college population, and that efforts to address students' needs must focus on commonality of need rather than on age groups.

Regarding the comparison of need levels before and after one semester, although hypothesis V showed that need levels were significantly lower after one semester in the areas of career development, self awareness, and reading and study skills, the correlational analysis of before and after scores show that these were highly correlated. For example, if a student had a high career development need before the semester, it was likely that that student would have a high career development need after the semester,

even though the mean need of the group may have decreased. This result again supports the notion that being in college does change students, but that this change requires time -- changes over the period of one semester are generally not dramatic. Student development is an ongoing process during the student's permanence at the college.

Other Analyses. Data of a more subjective nature regarding students' reactions to the CPASI and the assessment process were gathered and analyzed. Students had a somewhat clear idea of the purpose of the CPASI during the initial testing, and clarity increased by the retesting. This result points to the need to spend time at the beginning of the process explaining the nature of the instrument and its purpose, while trying to avoid a testing bias.

When asked if they remembered their initial CPASI results, a large percentage did remember, but many of those with recommendations did not follow them. Those that gave reasons for not following recommendations stated the reasons as primarily related to scheduling, availability of courses, and time constraints, although some said that they felt their need could be met in ways

other than by taking a course which was not part of their program.

Students were also asked to mention areas of need that were not addressed by the CPASI, with which they felt the college should provide assistance. Most students considered that the areas already addressed were the most important. However, additional areas mentioned reflected some of the most pressing concerns students had, such as parking, job placement, and transfer of credits.

Summary. The results of this study show that students at North Shore Community College have career, personal, and study skills needs that can be assessed before starting college and at different stages during their permanence in college. Generally, there are no significant differences between the need levels of males and females. However, females generally have higher grade point averages than males. Transfer students, for the most part, have lower averages than career students. This fact may be related to the result showing that tranfer students have higher decision making and career development needs than do career students; lack of career direction thus appears to have a negative effect on achievement. Regarding age, older students generally do better in college than younger students. However,

regarding need levels of the various age groups, there is no clear pattern. It appears that the needs of younger students generally decrease through the college experience at a faster rate than those of older students. On the other hand, older students enter college with greater apprehension about their ability to succeed and appear to gain confidence as they progress through college. Students change as a result of attending college, but this change is gradual and is hardly noticeable after one semester. Also, students are able to rate their need levels most accurately in the more tangible areas of career development, stress management, and reading and study skills, and they have more difficulty rating their needs in decision making, self awareness, and interpersonal communications. Therefore, an instrument such as the CPASI appears to be more valid in assessing these subjective areas in an efficient and timely manner. However, the purpose of the program needs to be made clearer to students, and a stronger link between scores and recommendations is necessary to increase the effectiveness of the total program.

Students with the highest grade point averages are, generally, older females enrolled in career programs. Those for whom participation in the CPASI program appears

to benefit most are males in the 20-25 age group and those who took advantage of the support services available.

The CPASI instrument appears to address key issues of concern to community college students, and provides a means to assess their needs in an efficient and timely manner during the Assessment/Orientation/Registration program. While participation in the CPASI program has a positive effect on students' use of support services, it does not significantly affect their enrollment in recommended courses. There is evidence, however, that taking the CPASI has a positive effect on students' continuation in college through two consecutive semesters.

Recommendations

The academic needs of community college students has been the topic of many previous studies. This study addressed a relatively unresearched area, that of their personal, career, and study skills. It focused on a program designed to assess students' needs and to provide the necessary courses and services to promote student development. It was an initial attempt to systematize and perform empirical research in this widely neglected area. As such, the study had limitations and weaknesses. One

of the weaknesses of the research was the use of an instrument (the CPASI) for which validity and reliability information was not available. However, the high correlations between data obtained through the instrument and data obtained through direct questioning of students justify a high degree of reliance on the results. The other main weakness of the study was the lack of control of the follow-up sample, due to the use of volunteers. Additional research should provide for more stringent control of the follow-up sample.

These weaknesses notwithstanding, the program being evaluated is innovative and is presently limited to local application and, as such, can benefit from the results and conclusions drawn from the study.

The results confirm the diverse nature of the community college population, with widespread needs in the target areas. Although both students and the institution recognize the existence of these needs, there is still a wide gap between need and the use of appropriate college services. This is most probably due to the weakness of the link between perception of need and willingness to use college services or enroll in personal and study skills development courses. Personal, family, and finanacial commitments, as well as rigidity of academic curricula contribute to this gap. As a result, some services are

Academic Skills Inventory (CPASI) is the vehicle for the assessment of needs, an essential component of the program. The results of this study show that this program has the potential for identifying the students that are in need of services and for closing that gap between needy students and services, but that some modifications and further development could strengthen the process. Following are several recommendations based on the results of the study.

1. All college personnel, including student services, academic, and administrative, need to increase their awareness of the close interaction of career, personal, and study skills needs and success in college.
2. The development of any new program or curriculum at the college should include plans to integrate discussion on the personal, career, and study skills areas and their relationship to academic success.
3. The career, personal, and study skills component of the Assessment/Orientation/Registration program needs to be expanded to increase the amount of time spent explaining the CPASI instrument and discussing individual students' recommendations. Further, more emphasis should

underutilized, and some personal and study skills development courses are underenrolled, while there are students struggling unsuccessfully with the very issues these services and courses are designed to address.

Among students who come to the community college with personal, career, and study skills needs, there are essentially three types: (a) those who take advantage of the services and courses available at the community college, and achieve high levels of development; (b) those who possess and utilize personal, family, and community resources to succeed in college and therefore seldom need to utilize college services; and (c) those who for a number of reasons lack personal and family resources, and yet do not utilize the appropriate college services and courses. Many of these students drop out of college or do not achieve the academic success of which they are capable. This study was concerned primarily with the third group, those toward whom the community college has a special commitment to serve.

North Shore Community College is a pioneer among community colleges in attempting to focus directly on the career, personal, and academic needs of its students in a systematic manner. The Assessment/Orientation/ Registration program has provided a practical framework for this effort to occur. The Career, Personal, and

be placed on reinforcing these recommendations at the point when students register for their first semester of college. Faculty advisors should also become involved in reinforcing these recommendations.

4. The CPASI should undergo further revision to implement the results of the present study. It is recommended that the two primary need areas, career development and reading and study skills be expanded in the instrument. The remaining areas (decision making, stress management, self-concept, and interpersonal communications) need to be examined closely for consolidation with the key areas or for further clarification.
5. The present research has identified certain groups of students who have high needs and can be considered "at risk" of academic failure. These groups include younger students, males, and transfer students. Efforts should be increased to find out more about these students and to provide programs and services meet their special needs. Further research should be designed to discover other groups of high risk students.

6. Further research should be planned to address validity and reliability issues of the CPASI. This research should include an item analysis.
7. An effort should continue to evaluate the accessibility, flexibility, and variety of support services and courses, and students' use and satisfaction of the same.
8. Further research into the area of non-completion of college coursework is necessary. One possible vehicle is the exit interview with students withdrawing from college. At this time, students could be questioned about their need levels, and their use of and satisfaction with personal development courses and services.

North Shore Community College has had a leadership role in student development philosophy and programs in New England. Leadership positions are not static; to be maintained, constant reevaluation and adaptation needs to occur. Many other community colleges are interested in establishing personal, career, and study skills assessment programs. Thus, student personnel administrators have been following with great interest the program which has been the subject of this study. The time, personnel, and philosophical commitments required by such a program are large, and administrators are reluctant to undertake new

programs without demonstrated effectiveness in reaching the desired goals. Therefore, the results of this study have a very practical significance. With additional refinement and development, the career, personal, and study skills assessment instrument and program will maximize the direct benefits to students and therefore to the institution. As a result, not only North Shore Community College but perhaps other community colleges can learn how to more effectively measure students' personal, career, and study skills needs, provide the appropriate services and courses, and strengthen the linkages between need and service. Only by reaching this goal can community colleges truly accomplish their mission of meeting the unmet needs of students.

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APPENDIX A

DEVELOPMENT, DESIGN, & PILOT STUDIES OF THE CAREER, PERSONAL, AND ACADEMIC SKILLS INVENTORY (CPASI)

DEVELOPMENT, DESIGN, AND PILOT STUDIES OF THE CAREER, PERSONAL, AND ACADEMIC SKILLS INVENTORY (CPASI)

Assessing Career and Personal Needs

When the Assessment/Orientation/Registration program was first implemented at North Shore Community College in the summer of 1976, it included only an academic assessment component in the subjects of English and mathematics. The college had considerable prior experience with this type of assessment with a small group of disadvantaged students. The area of career and personal assessment was less amenable to standardized group testing and, therefore, had a slower and more difficult development. As a result, during the first two years of the program, this component lagged behind the academic assessment.

Upon deciding to add a personal and career component to the program, the staff the Counseling Center began a search for an instrument with the following characteristics:

1. Self-reporting or nonprojective. This type of instrument was preferred over a projective type, which might contain complex scoring and interpretative formats and not be conducive to group administration and interpretation.
2. Short administration time. Total administration, scoring and interpretation time should be in the range of 20-35 minutes to fit the format of the day's program of activities.
3. Easy to take, score, and interpret. The reasons for this requirement were similar to those stated previously and for the additional reason of reducing the possible threatening nature of a "required" test. Ideally, the instrument should be either machine scored at the college or self-scored by students, so that the results could be available for interpretation later in the day.

During the search for an instrument, a large number of tests available on the market were reviewed, and the following three were piloted: Mooney Problem Checklist (adapted), The Priority Counseling Survey (Mincomp Corporation, 1972), and the Cooperative Institutional Research Program (American Council of Education, 1980). After piloting, evaluating, and determining that none of these instruments was adequate, a decision was made to develop an instrument specifically tailored to the program, and that could additionally be applicable to other community college populations.

Developing the Career, Personal, and Academic Skills Inventory (CPASI)

The first step toward developing a new instrument was to collect data concerning the type of issues that were of paramount concern to community college students. The literature has consistently pointed out that, especially in the case of community college students, emotional and career issues are closely related to academic ones, and that a successful developmental education program must focus on all of these (Cross, 1968 & 1971).

During the Spring of 1976, the Dean of Students' Office at North Shore Community College had conducted a needs assessment of freshmen using a checklist type inventory, with a format similar to that of the Mooney Problem Checklist. Named "Student Needs Survey," it included 111 items and addressed the following areas:

Finances, living conditions, and employment
Health and physical development
Social and recreational activities
Personal and social psychological relations
Home and family
Adjustment to college (school) work
The future: vocational and educational
Curriculum and teaching procedures

The number of items addressing each area ranged from 12 to 16. Students were asked to go through the items underlining the problems that were of concern. Then students were instructed to look back over the items underlined and to circle the numbers in front of the items for which they felt North Shore Community College should provide assistance in solving.

The survey was administered to approximately 70 students enrolled in freshman English composition courses during the midpoint of the Spring 1976 semester (students in all programs of study were required to take English composition). The results of this study were never published nor utilized in a significant manner due to the complexity of the scoring and the difficulties of drawing group conclusions using the instrument. During that time, there were also major personnel changes in the Dean of Students' Office. However, the study was a valuable first effort of the college administration to begin learning more about the career and personal needs of their students. Although the data were not highly reliable because of the limitations stated above, they gave strong indications that students had considerable needs in the areas of finances, health, interpersonal relationships,

career development, and study skills. From that initial effort, important lessons were learned concerning design, administration, timing and interpretation that were to be useful later.

Valuable information was also obtained from the pilot testings of the Priority Counseling Survey and the Cooperative Institutional Research Program.

The Priority Counseling Survey was administered during two semesters to almost 500 entering freshmen in 1978. Students showed the highest needs in the areas of career decision making, course selection, academic skills, health service, interpersonal relations, self-awareness, and stress management (Baker & Montero, 1978). Its use was not continued for two reasons: (1) Results had to be mailed away to be scored, with a turnaround time of at least two weeks. (2) The focus of the instrument was on career choice rather than career development, and some of the items were irrelevant to North Shore students.

The Cooperative Institutional Research Program provided a comprehensive profile of characteristics and attitudes of students entering NSCC--data not previously collected in a formal manner. It was administered during the Fall of 1980 to a total of 779 students (60% of the freshman student population). Selected results show a student who earned mostly Bs and Cs in high school, and is living with parents, although not receiving much direct assistance from them. Principal reasons for going to college were: to get a better job (83%), to make more money (65%), and to learn more about things (76%). Reasons for selecting NSCC were: low tuition (37%), special education programs (33%), and a good academic reputation (30%). Substantial numbers of students expressed a need for remedial work in math (18%) and English (12%). Although 7% estimated that chances were very good that they would change their major field and 6% considered they might change their career choice, only 5% anticipated they would seek vocational counseling and 3% individual counseling (NSCC, 1981). While providing an interesting profile of students attending North Shore, this instrument was discontinued also because the scoring could not be localized and the content did not directly address the goals of the program.

Stage I: Career and Personal Assessment Inventory (CAPAI).

In developing the instrument, an initial decision was to use a self-reporting, or nonprojective inventory. "Inventories present lists of questions or statements

which describe behaviors characteristic of certain personality traits, and the individual is asked to indicate (yes, no, undecided) whether the statement describes him or her." (Gay, 1976, p. 97) The "agree-disagree" form of item response was chosen. This type of format was selected for its clarity and directness, factors which were expected would contribute to the validity of the instrument (Kerlinger, 1973).

One serious problem of self-report inventories is that of accurate responses, according to Gay (1976, p. 97). "Personality scores are only valid to the degree that the respondent is honest and selects responses which truly characterize him or her." This can be achieved through the reduction of the response set, "the tendency of an individual to continually select responses which he or she believes are the most socially acceptable." (p. 97) To accomplish this, items were phrased so that in some cases an "agree" response and in others a "disagree" response indicated need with no set pattern. The following items illustrate the use of this technique:

"Test taking makes me very anxious" (agree=need)
"I have confidence in my own decisions" (disagree=need)
"I can usually relax when I want to" (disagree=need)
"I seem to have trouble controlling my temper" (agree=need)

As a starting point, items contained in the Student Needs Survey were examined and those deemed relevant were extracted. After many drafts and revisions, an initial inventory was developed, the Career and Personal Assessment Inventory (CAPAI), consisting of 50 statements addressing concerns in the following 12 areas:

1. Career planning, exploration, and decision making (16)
2. Personal decision making (12)
3. Stress management and control (15)
4. Self awareness, self acceptance, and personality growth and development (13)
5. Assertiveness (18)
6. Effective interpersonal communications and relationships (12)
7. Issues relating to re-entry to school (5)
8. Issues requiring immediate counseling attention (4)
9. College transfer (2)
10. Smoking (1)
11. Weight control and nutrition (1)

12. Health and sexuality (1)

The inventory was printed on two-part, pressure-sensitive paper. Responses were marked on the top sheet, which students could easily remove later to uncover the scoring scheme. Only need statements added to the score in a particular area, taking into account the random pattern of "agree" and "disagree" statements. Scoring directions were handed out to each student during the interpretation session. The scoring system involved adding only those responses which indicated need, and bypassing those responses which indicated no need (high score = high need).

An Interpretation Guide was developed and distributed to each student during the afternoon session. It contained spaces to record scores in each area and recommendations for each score. In areas 1-8, recommendations were made for three levels of need: high, medium, and low. These areas had enough items each to be able to differentiate between these three levels of need. The cutoff for a "high need" score was set at one-half of the total possible need responses. Only students with a high need score were given strong recommendations to take courses and use services, although the other students were told they might find these courses and services "helpful" or "useful." Students received recommendations only for courses and workshops available during the upcoming semester. Recommendations in areas for which the instrument contained only one or two items were listed separately, at the end of the Interpretation Guide, with only one level of recommendation for each.

Stage I pilot study. The initial pilot study was accomplished during the Summer of 1981. The population used was the entire number of students involved in the Assessment/Orientation/Registration program after the instrument became available. A total of 288 students completed the CAPAI, approximately one third of the total number of students admitted to the college that summer.

Results.

1. The projected administration time was accurate and fit it well with the other components of the Assessment/ Orientation/Registration program.

2. Although requiring some assistance, students were able to understand the self-scoring directions and obtain results during the afternoon Orientation session, as desired. However, because of the format of the instrument, consisting of three two-part pages, an introduction sheet, a scoring instruction sheet, and an Interpretation Guide,

there was an excessive amount of paper for the students to handle. Much time was consumed explaining which sheets to discard, which to return to the testing folder, and which to retain for personal use. Both students and staff complained about this.

3. The Interpretation Guide was rather lengthy for students to read in the time available (three pages). As a result, much of the value of the interpretive information was lost. In addition, the Interpretation Guide gave recommendations only for those courses offered during the upcoming semester. Whereas many students do not have space available in their first semester schedules to take these courses, but may do so at a later time, it was suggested that all possible courses related to each area be included.

4. The scoring system and the length of the Interpretation Guide were such that recommendations in areas 9-12, with few items for each, were often overlooked by students.

5. A very small number of "high" recommendations were given, possibly an indication that the cutoff scores were set too low.

Stage II: Career, Personal, and Academic Skills Inventory (CPASI).

One of the side benefits of the work toward development of the instrument has been the increased cooperation between the Academic Skills Center and the Counseling Center. Prior to the addition of the personal and career component, the Academic Skills Center had almost sole responsibility for the Assessment program. With the introduction of a career and personal instrument, new levels of teamwork and interaction were now possible. One of the ongoing efforts of the program was to maximize the benefit obtained while reducing the assessment time. Thus, the feasibility of incorporating the area of reading and study skills, previously assessed using a separate survey, to the Career and Personal Assessment Inventory, was studied. It was anticipated that this change could reduce the total Assessment time by 10 to 15 minutes without loss of valuable data. An added benefit would be an increased awareness among students and faculty of the interaction and interrelation among personal, career, and academic concerns.

During the Fall of 1981 meetings were held between the Assessment coordinators of the two offices and the instrument was modified to reflect the addition of reading and study skills items. To do this without lengthening

the instrument, some of the original items had to be eliminated. A careful review of items resulted in 10 items being eliminated or combined with others, allowing for the addition of 10 reading and study skills items. Among the items eliminated were those categorized as "issues requiring immediate counseling attention." Feedback from counselors had been that time was too short and the groups of students too large for an adequate individual response to this area during the Orientation session. It appeared that the concerns identified through these items usually related to one of the other areas in the instrument (e.g. career choice or stress management), and could therefore be addressed through the recommendations in the Interpretation Guide or through self-referral. A final modification was a complete revision, involving shortening and simplification, of the Interpretation Guide.

The resulting instrument had the same number of items (50) as the original version. In terms of format, the instrument was typed on large sheets and then reduced photographically, so as to require two pages rather than three. Students also received a sheet with scoring instructions and a one-page Interpretation Guide, possible through the revisions and photoreduction.

This second version of the instrument, the Career, Personal and Academic Skills Inventory (CPASI), addressed the following areas. (The number of items addressing each area is in parenthesis.)

1. Career planning, exploration, and decision making (12)
2. Personal decision making (10)
3. Stress management and control (16)
4. Self awareness, self-acceptance, and personality growth and development (17)
5. Interpersonal communications and relationships (13)
6. Reading and study skills (12)
7. Issues relating to re-entry to school (3)
8. College transfer (2)
9. Smoking (1)
10. Weight control and nutrition (1)
11. Health and sexuality (1)
12. Separation and divorce (1)
13. Alcohol use (1)
14. Spelling (1)

To simplify the scoring process, those items relating to areas in which there were only one or two items were placed at the end of the instrument, rather than

interspersed (areas 8-14). Areas 1-7 were scored using columns with the same number heading, as in the initial version.

Again students received an Interpretation Guide, with space to record scores and with recommendations. For reasons of clarity and emphasis, recommendations were given only for "high" levels of need, omitting the medium and low levels. As in the first version, the cutoff for a "high need" score was set at one-half of the total possible need responses. Another change was that recommendations were given only for courses in areas 1-7, and for courses and/or a specific service in areas 8-14. Counselors supplemented the Guide with additional information on courses and services and encouragement to use them.

Stage II pilot study. The second pilot study took place during the Spring 1982 Assessment/Orientation/Registration program, with a total of 157 students completing the CPASI. This number represents the total incoming class at the mid-year point, minus those who for some reason were exempt from program participation.

Feedback from counselors indicated that the two-page instrument was indeed much easier to handle. However, students continued to complain about the amount of paper involved in the entire process and the confusion regarding which sheets to discard, which to return to testing folders, and which to retain for their own use.

The revised Interpretation Guide met with overwhelming approval due to its clarity, directness and one-page length. Certainly, it was a significant improvement over the original Guide; however, further revision seemed necessary for added simplicity.

Stage III.

After two pilot studies with resulting revisions, a decision was made to attempt a final revision which would accomplish the following goals:

1. Provide an instrument that oculd be used in any semester or year, that is, one which would be independent of the particular course offerings of one given semester. It should, therefore, be simplified to address only those areas found, through the literature review and past experience, to be of concern to large number of community college students. Changes in course offerings and services would be reflected in the Interpretation Guide, and would be revised between semesters and/or years. An

objective was set to develop an instrument to be used during the next three years, within which an in-depth evaluation would take place.

2. Provide an instrument that could possibly be used at other community colleges with similar programs. This goal was to be accomplished also by addressing areas of highest concern to community college students in general. Whereas community colleges differ greatly in the services and courses available, specific recommendations would be left up to each individual colleges. To achieve this stage, it was recognized that a unified scoring pattern needed to be developed, rather than the varying cutoff scores of earlier versions.

3. Further simplify and streamline the logistical aspects of the process.

The decision to reduce the number of areas addressed directly by the instrument was a difficult but important one. It was made to avoid a common pitfall of trying to accomplish too much with one instrument, and to rather aim for high validity in a limited number of areas. Other issues of validity pointed to the need to insure that the areas covered were done so adequately, by having enough items for each scale, rather than diluting the effort through few items on many scales.

The following six areas were chosen to be addressed:

1. Career awareness, planning, and decision making
2. Personal decision making and problem solving
3. Stress awareness and management
4. Self awareness and self concept
5. Interpersonal communications and relations
6. Reading and study skills

The areas eliminated were those for which there had been only one item in which an "agree" response pointed directly to a particular need (e.g. "I have some concerns regarding use and abuse of alcohol," and "I am presently dealing with issues concerning separation and/or divorce"). The area of college transfer, of high need as shown in the pilot studies, was incorporated into the career area (#1).

Another decision was to standardize the numer of items in each area, while remaining within the boundaries of a 50-item instrument. This was possible because some items related to more than one area. After examining the instrument, it was decided that each area would have 15 items. The cutoff for "high need" was set at eight, more than half of the possible need responses. The same forced-choice, "agree/disagree" response format was

maintained, with a random ordering of items. Physical format changes were the elimination of separate introduction and scoring sheets, by incorporating these into the instrument.

The concept of a simple, visually appealing format for the Interpretation Guide was continued. Minor modifications included the recommendation of both courses and services in each area. The areas which had been eliminated or combined with others were referred to on the bottom of the Guide, with the indication "You may want to consider enrolling in one or more of the following courses and workshops," and a list of the existing options. Another change, which, while small, may open new doors for future collaboration with other college segments, was the addition of a recommendation for a three-credit course offered by the Behavioral Science Department (Psychology and the Self) as one of the options in the self awareness and self concept area. This was done after consulting with the Department Chair of Behavioral Sciences and receiving wholehearted support for the concept. While representing a rather small change in the Interpretation Guide, it illustrates the possibilities for adapting the Interpretation Guide to the particular situation.

The personal, career, and study skills assessment program has arrived at a stage of maturity and stability. This is an appropriate time to begin studies on issues of effectiveness, validity and reliability before making firm decisions about its continuation at North Shore Community College or expanding its use to other community colleges.

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APPENDIX B

CAREER, PERSONAL, AND ACADEMIC SKILLS SKILLS INVENTORY (CPASI)

PROGRAM _____

CAREER, PERSONAL & ACADEMIC SKILLS INVENTORY

The faculty and staff of the college are interested in helping you identify your career, personal and academic needs. We hope this process will help you in selecting courses and making use of the support services available at the college.

For this purpose, we're asking you to complete the following inventory. As you read each statement, indicate whether you AGREE or DISAGREE by checking the appropriate space. Later, you will have an opportunity to score your own inventory and receive an interpretation of the results.

	AGREE	DISAGREE	
1.	_____	_____	I feel I know what things to consider in choosing a career.
2.	_____	_____	I know how to organize and manage my time so that I can accomplish most of what I set out to do.
3.	_____	_____	I keep changing my mind about what career I want to pursue.
4.	_____	_____	In certain situations, it seems like I always say the wrong thing.
5.	_____	_____	After reading, I often find I can't remember what I read.
6.	_____	_____	I feel I have to apologize when I offer constructive criticism.
7.	_____	_____	Other people can usually get me to change my mind about decisions I've already made.
8.	_____	_____	I don't know which jobs are the best match for my abilities and interests.
9.	_____	_____	Test taking makes me very anxious.
10.	_____	_____	It is not always necessary that others approve of what I do.
11.	_____	_____	Many times I can know how a person is feeling just by observing their facial expressions and their body posture.
12.	_____	_____	I haven't given much thought to what I want to accomplish in the next ten years.
13.	_____	_____	I don't know where to get information on careers I may be considering.
14.	_____	_____	I feel confident that my chosen career field addresses my needs, values, interests and abilities.
15.	_____	_____	I usually look forward to the future.
16.	_____	_____	I'm not sure I know how to take notes in class.
17.	_____	_____	When acquiring new information, I try to relate it to things I already know.
18.	_____	_____	I have quite a lot of control over what happens to me in life.
19.	_____	_____	Many times I don't say what I feel because I'm afraid of offending someone or being misunderstood.
20.	_____	_____	I usually make decisions considering only my emotions or gut feelings rather than facts.
21.	_____	_____	I can usually accept constructive criticism.
22.	_____	_____	I find I am easily distracted by other people and events when trying to accomplish a task of personal importance.

DIRECTIONS FOR SCORING

1. Observe the numbers in some of the answer boxes (at the left). Observe also the columns to the right of the answer boxes numbered 1-6. You will be placing √'s in some of these boxes.

2. On each item--if your answer appears in a box that has numbers, then PUT A √ IN EACH OF THE COLUMNS INDICATED.

EXAMPLE:	AGREE	DISAGREE	COL.1	COL.2	COL.3	COL.4	COL.5	COL.6
	1.	√ 1	√					

3. If your answer appears in a box that has no numbers, SKIP TO THE NEXT ITEM.

4. When you reach item 50 go back and add the total for each column (vertically) and write in your totals at the bottom of the second page.

	AGREE	DISAGREE	COL.1	COL.2	COL.3	COL.4	COL.5	COL.6
1.		1						
2.		3,6						
3.	1,2							
4.	5							
5.	2,6							
6.	3,5							
7.	2,5							
8.	1,4							
9.	3,6							
10.		4,5						
11.		5						
12.	1,2,4							
13.	1,2							
14.		1,2						
15.		1,4						
16.	6							
17.		6						
18.		1,2,3,4,5						
19.	5							
20.	2							
21.		3,4,5						
22.	3,6							

	AGREE	DISAGREE	
23.	____	____	When I make important decisions, I consider only the facts and not my emotions or gut feelings.
24.	____	____	I have confidence in my own decisions.
25.	____	____	I am not afraid to be myself.
26.	____	____	I'd like to find out what makes people satisfied or dissatisfied with their jobs.
27.	____	____	I have an effective study system when preparing for objective and essay exams.
28.	____	____	I have no idea what type of career or job I will eventually end up in.
29.	____	____	I've been away from school for several years and don't know if I can juggle family, school, and other things in my life.
30.	____	____	I usually get along well with my family.
31.	____	____	When preparing an essay, I can clearly organize my thoughts.
32.	____	____	I know what types of jobs are available in my chosen career field with a community college degree.
33.	____	____	I can usually relax when I want to.
34.	____	____	I seem to have trouble controlling my temper.
35.	____	____	I have some close friends.
36.	____	____	I don't know how to go about looking for a job.
37.	____	____	I feel that I can handle most difficult situations that come up in life.
38.	____	____	I have a comfortable balance in my life between learning, working and playing.
39.	____	____	When reading, I try to notice new words and figure out their meanings.
40.	____	____	I have been away from school for several years and don't know if I can succeed in college.
41.	____	____	I am basically satisfied with the way I am.
42.	____	____	I have a pretty clear idea of what career I wish to pursue.
43.	____	____	I am planning to continue my education beyond the community college, but am unsure about how to go about doing this.
44.	____	____	When I have to make an important decision, I usually gather enough information about my alternatives.
45.	____	____	I have difficulty deciding what material is important when studying for a test.
46.	____	____	I look forward to certain times when I can be alone.
47.	____	____	I'm afraid my study skills are too weak to succeed in college.
48.	____	____	Spelling words correctly is a constant concern of mine.
49.	____	____	I believe my reading skills are adequate for college work.
50.	____	____	I am generally quite satisfied with the way I look.

	AGREE	DISAGREE	COL. 1	COL. 2	COL. 3	COL. 4	COL. 5	COL. 6
23.	2							
24.		2,4						
25.		3,4,5						
26.	1,2							
27.		6						
28.	1,2							
29.	2,3,6							
30.		4,5						
31.		6						
32.		1						
33.		3,5						
34.	3,4,5							
35.		4,5						
36.	1							
37.		2,3,4,5						
38.		1,2,3						
39.		6						
40.	6							
41.		3,4,5						
42.		1						
43.	1							
44.		2						
45.	6							
46.		3,4						
47.	6							
48.	6							
49.		6						
50.		4						
	TOTALS ...		____	____	____	____	____	____

CAREER, PERSONAL AND ACADEMIC SKILLS INVENTORY INTERPRETATION GUIDE

TOTAL SCORE	AREA	RECOMMENDATIONS (If your score is 6 or higher)	
		COURSES (see Catalog and Master Schedule for more information)	SERVICES (See Guide to Student & Academic Support Services brochure for more information)
Col. 1 _____	Career awareness, planning, and decision making	PER110 Career & Life Activity Planning (1 credit)	Counseling Center Placement Office Center for Alternative Studies
Col. 2 _____	Personal decision making and problem solving	PER114 Decisions & Outcomes (1 credit)	Counseling Center
Col. 3 _____	Stress awareness and management	PER120 Relaxation Training & Anxiety Control (1 credit)	Counseling Center Health Service
Col. 4 _____	Self awareness and self concept	PER122 Personal Assessment & Self Awareness (1 credit) PER134 Personal Growth Through Psychodrama (1 credit) PSY132 Psychology & The Self (3 credits)	Counseling Center Health Service
Col. 5 _____	Interpersonal communications and relations	PER912 Skills in Effective Communication (1 credit) PER126 Assertiveness Training (1 credit) PER116 Transactional Analysis (1 credit)	Counseling
Col. 6 _____	Reading and study skills	ASD124 Superlearning, if you have passed the Communications competency. Otherwise, take COM 099 Basic Communications first.	Academic Skills Center

****

YOU MAY ALSO WANT TO CONSIDER ENROLLING IN ONE OR MORE OF THE FOLLOWING COURSES OR WORKSHOPS:

COURSES

PER128 Weight Control & Nutrition
PER112 Women's Health & Sexuality
PER130 Starting Over: Dealing with Separation & Divorce
PER108 Alcohol & You
PER132 Returning to School: Growth and Transition
ASD901 Finding What You Need - Accessing Information in a Library
ASD116 Speed Reading
ASD126 Dimensional Reading

WORKSHOPS

Transfer Workshops - Counseling Center
Career Testing & Planning Workshops - Counseling Center
Spelling Workshops - Academic Skills Center
Test with Less Stress Workshops - Counseling Center & Academic Skills Center

APPENDIX C

STRUCTURED INTERVIEW QUESTIONNAIRE FOR EXPERIMENTAL GROUP STUDENTS

Thank you for making this appointment.

The purpose of the study is to try to find out more about students that attend the community college. Before starting I'd like to remind you that all information you give us will be confidential and the results of this study will be reported only in summary form.

The first thing I'd like to ask you to do is to complete the Career, Personal and Academic Skills Inventory. You may recall completing this at the end of the Summer, during the Assessment/Orientation program. This time answer the inventory according to your opinions and feelings now, rather than trying to remember how you answered it before.

The reason we are asking you to retake this inventory is to gather some information about the instrument itself. (This will take about 15 minutes. Do not score.)

Next, I'd like to ask you just a few questions.

1. First, I'd like to get your opinions about the CPASI.

	Not clear at all				Extremely clear
A. When you took the CPASI this Summer, did you have a clear idea about why we were asking you those kinds of questions?	1	2	3	4	5
B. Now that you've taken it a second time, how much clearer is the purpose of the CPASI?	1	2	3	4	5

	Not helpful at all				Extremely helpful
C. In general, did you find taking the CPASI helpful in gathering your thoughts and/or finding out what the college had to offer?	1	2	3	4	5

	Very uncomfortable				Quite comfortable
D. How comfortable did you feel taking it during this Summer?	1	2	3	4	5

2. Next, I'm going to read a list of areas that are frequently of concern to community college students. As I read each statement please tell me whether this issue was of concern to you before this semester started and now, and the intensity of your concern.

	Now					Before This Semester Star				
	Not concerned				Highly concerned					
Clarity about career goals and plans	1	2	3	4	5	1	2	3	4	5
How to go about finding information on careers	1	2	3	4	5	1	2	3	4	5
What are the things a person must consider when making career decisions	1	2	3	4	5	1	2	3	4	5
Daily decision making and problem solving	1	2	3	4	5	1	2	3	4	5
Handling pressures of everyday living	1	2	3	4	5	1	2	3	4	5
Knowing who you are, what makes you tick and how you want to develop as a person	1	2	3	4	5	1	2	3	4	5
Knowing how to communicate well with others, such as family, friends, co-workers, teachers and other students	1	2	3	4	5	1	2	3	4	5

2. Continued . . .

	Now					Before This Semester Started				
	Not concerned				Highly concerned					
Knowing how to study in college - including note taking, preparing for and taking tests	1	2	3	4	5	1	2	3	4	5
Knowing how to understand what you read, identify the main idea and remember what you read	1	2	3	4	5	1	2	3	4	5

3. Are there any other areas that I didn't mention but that you feel (or felt before this semester started) are needs you have that NSCC should be able to help you with? Feel free to mention anything that comes to mind.

_____

_____

_____

_____

4. Now, think back over the semester. I'll read a list of services available at the college. Tell me if you used any of these, how many times (approximately), and how satisfied you were with the service.

Used	# of Times	Satisfaction: Very dissatisfied				Extremely Satisfied
____ Counseling	____	1	2	3	4	5
____ Academic Skills Center (tutoring)	____	1	2	3	4	5
____ Other tutoring labs (computer, math, business)	____	1	2	3	4	5
____ Student Life Office (or related student organizations)	____	1	2	3	4	5
____ Faculty Adviser	____	1	2	3	4	5

5. Now, I'm going to read a list of courses available at the college. As I go down the list, please tell me if you took any of these this semester or plan to take them next semester.

	Fall '82	Spring '83
Re-Entry Seminar (Returning to School)	_____	_____
Relaxation Training and Anxiety Control	_____	_____
Assertiveness Training	_____	_____
Career and Life Activity Planning	_____	_____
Separation and Divorce	_____	_____
Women's Health and Sexuality	_____	_____

5. Continued . . .	Fall '82	Spring '83
College Reading and Study Skills	_____	_____
Reading Improvement	_____	_____
Speed Reading	_____	_____
Critical Reading	_____	_____
Psychology and the Self	_____	_____
Weight Control and Nutrition	_____	_____
Skills for Effective Communication	_____	_____
Decision Making	_____	_____
Alcohol and You	_____	_____
Personal Growth Through Psychodrama	_____	_____

6. Try to remember the original results of the CPASI. The six areas addressed by the instrument were the following:

1. Career awareness, planning, and decision making
2. Personal decision making and problem solving
3. Stress awareness and management
4. Self awareness and self concept
5. Interpersonal communications and relations
6. Reading and Study Skills

Do you remember if you received a recommendation in any of these areas? If so, which?

If you did receive a recommendation, did you follow it?

If not, why?

Name _____

Date _____

Interviewer's Initials: _____

APPENDIX D

QUESTIONNAIRE FOR CONTROL GROUP STUDENTS

Name _____

STUDENT FOLLOW-UP SURVEY

1. Try to remember when you started full-time at NSCC in the Fall of 1982. The following is a list of areas that are frequently of concern to community college students. Write the number that best represents your level of concern before you started school and now on each line, according to the following scale: 1=not concerned at all; 2=slightly concerned; 3=moderately concerned; 4=highly concerned; 5=extremely concerned.

		Before starting at NSCC	Presently
a.	Career decision-making and planning	____	____
b.	Daily decision-making and problem solving	____	____
c.	Stress management - handling the pressures of everyday living	____	____
d.	Self-awareness - knowing I am what makes me tick, and growing as a person	____	____
e.	Communicating well with others, such as family, friends, co-workers, teachers, and other students	____	____
f.	Studying in college - including notetaking, preparing for and taking tests	____	____
g.	Understanding what I read, identify the main idea and remember what I read	____	____

2. Are there any other areas, not listed above, that you consider or considered before starting school, are areas the college should be able to help you with? Feel free to mention anything that comes to mind.

_____

_____

3. Now, think back over the time you've spent at NSCC. Check each service listed below that you have used at least once. Then write the number of times you've used it and circle the number that best represents your level of satisfaction with that service.

			Level of Satisfaction				
Used		# of times	Extremely dissatisfied				Extremely satisfied
____	Counseling Center	____	1	2	3	4	5
____	Academic Skills Center (tutoring in reading, writing and spelling)	____					
____	Other tutoring labs (computer, math, business)	____	1	2	3	4	5
____	Student Life Office (or any student organization)	____	1	2	3	4	5
____	Faculty adviser	____	1	2	3	4	5

4. Next is a list of courses available at the college. Please read down the list and check any courses that you have taken or might be interested in taking in the future.

	Have taken or am presently taking	Might take in the future
Relaxation Training and Anxiety Control	_____	_____
Assertiveness Training	_____	_____
Career and Life Activity Planning	_____	_____
Separation and Divorce	_____	_____
Women's Health and Sexuality	_____	_____
College Reading and Study Skills	_____	_____
Reading Improvement	_____	_____
Speed Reading	_____	_____
Critical Reading	_____	_____
Psychology and the Self	_____	_____
Weight Control and Nutrition	_____	_____
Skills for Effective Communication	_____	_____
Decision-Making	_____	_____
Alcohol and You	_____	_____
Personal Growth Through Psychodrama	_____	_____
Spelling Program	_____	_____
Re-Entry Seminar (Returning to School)	_____	_____

Thank you for your cooperation.

Please return in the enclosed envelope to:

North Shore Community College
Counseling Center - SR 221
3 Essex Street
Beverly, MA 01915-4560

APPENDIX E

LETTER AND FOLLOW-UP POSTCARD TO EXPERIMENTAL GROUP

The Commonwealth of Massachusetts
North Shore Community College
Beverly, Massachusetts 01915

December, 1982

I am conducting a study on community college students and would like to ask for your assistance. The study will focus on the career, academic and personal needs of students as they begin their studies at a community college.

Your participation in this project will require only about an hour of your time. The information you provide will be confidential and only will be reported in summary form. If you are interested, you may have a copy of the results of the study next semester.

We anticipate that the information obtained from this study will be valuable in identifying needs and providing career, academic and personal development courses and services to students.

Your cooperation will be greatly appreciated. To schedule an appointment, please call 927-4850, extension 547 as soon as possible and sav your're calling about the survey.

Sincerely,

Ali Montero

Ali Montero
Counselor

December 1982

Dear Student:

Approximately one week ago I wrote to you asking for your participation in a study on community college students. Since I have not heard from you yet, I'm dropping you a note to let you know that your participation in this project would be very valuable and highly appreciated. Any information you provide will be confidential and only will be reported in summary form.

To schedule an appointment, please call 927-4850, extension 547 as soon as possible and say you're calling about the survey.

Thank you for your cooperation.

Ali Montero
Counselor

APPENDIX F

LETTER AND FOLLOW-UP POSTCARD TO CONTROL GROUP

The Commonwealth of Massachusetts
North Shore Community College
Beverly, Massachusetts 01915

March 1983

Dear Student:

Now that you are in your second semester at NSCC, I am contacting you to ask a few questions regarding your experience so far. To do this, I have enclosed a brief questionnaire that will take only 5-10 minutes of your time to complete. Please return it in the enclosed self-addressed, postage-paid envelope.

Your cooperation will be greatly appreciated and will help us improve our services and programs. Any information you provide will be strictly confidential and will be reported only in group form.

Sincerely,

Ali Montero

Ali Montero
Counseling Center

March 1983

Dear Student:

Approximately two weeks ago I wrote to you asking you to complete a brief follow-up survey. Since I have not heard from you yet, I'm dropping you a note to let you know that your cooperation will be highly appreciated. Your answers will be kep confidential and only will be reported in summary form.

If you did not get a survey form or no longer have one, please call Cindy Bouchard at 927-4850, extension 547 and she will mail you one.

Thank you for your cooperation.

Ali Montero

Ali Montero
Counselor

APPENDIX G

TIMETABLE OF DATA COLLECTION ACTIVITIES

TIMETABLE FOR DATA COLLECTION ACTIVITIES

August, 1982	Assessment/Orientation/ Registration program was held on August 3, 10, 17, and 24. Control group was selected and did not take the CPASI. All remaining students took the CPASI.
November, 1982	Experimental group was identified through the assessment files in the Academic Skills Center. Initial CPASI scores were recorded.
December, 1982	Letter mailed to experimental group students inviting them to make an appointment for a CPASI retesting and a structured interview.
January, 1983	Follow-up postcard mailed to non-responding experimental group students. Appointments with responding students began.
February, 1983	1) Phone calling of non-responding experimental group students. 2) Appointments continued with those who scheduled. 3) The following data was collected from student records: sex, age, program of study, grade point average for Fall 1982, enrollment and completion of courses, and reenrollment or non-reenrollment in Spring 1983.
March, 1983	1) Completion of follow up of experimental group. 2) Questionnaire mailed to control group students. 3) Follow-up postcard mailed to non-responding control group students.
April, 1983	1) Phone calling of non-responding control group students. 2) Completion of follow up of control group.