

The effectiveness of summer orientation
programs on retention and subsequent academic
performance of minority students: A look at SEP

by

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INTRODUCTION

The purpose of this study was to examine the effectiveness of orientation programs on the retention and/or attrition and subsequent academic performance of students matriculating in a Midwestern, land-grant science and technology university. In looking at the definition of orientation, Webster's New Twentieth Century Dictionary defines orientation as familiarization with and adaptation to a situation or environment; specifically, in psychology, interpretation of the environment as to time, space, objects, and persons (n, 3). Orientation often means to become accustomed to our surroundings; and to adjust oneself to other people and new places.

What do we mean by "adjusting" to an environment or situation? Adjustment means to fix, adapt, or set right as well as to become acquainted or accustomed to a new and/or different environment. For the purpose of this study, the environment that is being adjusted or adapted to is the college or university setting.

In a university, environment encompasses everyone who has something to do with the university (i.e., faculty, administrators, peers, etc.). It also entails the buildings and climate of the atmosphere, as well as food and water (Banning, 1984). These are a few of the elements to which

the freshman entering college must adjust to, become oriented to.

Again, orientation is familiarizing and adapting oneself to a situation or environment. Orientation is becoming fit--fit to live (Hawkes & Johns, 1929). For as a student matriculating through college, he must prepare himself to live life at college as well as preparing himself for life after the university (Hawkes & Johns, 1929).

Therefore, orientation serves several purposes. First, orientation is a tool used to aid the college freshman in adjusting or adapting to their new environment. It helps acquaint the student to that institution's aims, goals, purposes, structure, etc. It also acquaints him to the various activities (clubs, athletics, etc.) of the university environment. Second, orientation fosters training in thinking. It examines the methods and processes of thinking. Orientation is used to discover and evaluate one's capacities and develop one's potentials to the fullest. Third, orientation aims for the improvement of study techniques. It searches for and develops advantageous methods of study and learning. Fourth, orientation probes for self-knowledge and self-development. Freshmen should begin looking at vocational and avocational planning. Also, freshmen should determine the purposes, scopes, and values of the various educational training. Last, orientation

strives to give the college freshman a better understanding of the nature and value of human relations involved in group life. Hence, it attempts to increase the social capabilities of the college freshman.

As we can see, orientation can play a major role in the retention or attrition of freshmen students. Retention is defined as the ability to retain or the state of being retained in an institution until completion of a program. Attrition is defined as withdrawal from an institution without formally completing a program. Attrition has increasingly demanded the attention of college and university administrators. For some administrators, students who withdraw from school do so as a result of institutional failure (Ewell, 1984). Hence, the preoccupation to retain students throughout their college career. This has led many institutions to develop student retention programs, in which orientation plays a role. However, before implementing a retention program, the college or university must discover (1) the degree to which it has a retention program, (2) the particular student populations among which the problem is occurring, and (3) some of the reasons why the problem is occurring (Ewell, 1984). Also, the institution should estimate what kinds of students are dropping out of what kinds of programs under what kinds of circumstances (Ewell, 1984).

Students withdraw from colleges and universities for many reasons. These may include financial problems, lack of academic ability, academic difficulty, have not been properly counseled, lack of interaction with peers and/or faculty, and lack of motivation. Research has indicated that students often make the decision to leave an institution long before they act on it (Lenning, Beal, & Sauer, 1980). Robert Grose (1980) stated that some students should leave college. However, students attend college for increasingly diverse reasons, very few of which may include earning a baccalaureate degree. Therefore, the institution must look at the reasons why these students entered college and determine if they can contribute to these reasons. The mission of effective retention programs is to prevent the ones who should not drop out from doing so for preventable reasons (Ewell, 1984). This is where an effective orientation program plays a part.

A high school student making the transition to a university is usually curious, open, eager to learn, to have new experiences, to think great thoughts and have mighty dreams. While matriculating through the university, his youthful idealism must change. In the interim, he grows more realistic and becomes aware of the harsh necessities of life and the need to compromise to the requirements of the

established order. These are the things which the college freshman must face.

As stated earlier, the purpose of orientation is to help adjust the new student to university life, to aid in the improvement of study and learning methods and assist in occupational or vocational selection. That is, to prepare him to live in and after the university. The freshman year should focus on the interest of each student, whatever they feel is important to them. The institution cannot ignore or overlook the fact that it has some impact on the student in the shaping of their personality. By the very fact that it presumes to inform the minds of the young, the institution becomes involved in the development of the whole person, of which the intellectual facilities are but a part. By facilitating a retention program and utilizing an orientation program that fulfills the purposes and goals of the program, the institution will have acknowledged its responsibility in assisting not only the smooth transition from high school to the university, but also the development of the student as an individual.

Statement of the Problem

Many colleges and universities have and are developing and utilizing orientation programs that will aid in the retention of college students. Also, the orientation programs being employed are to foster the academic

performance of those students who come from educational disadvantaged and low-income backgrounds. The purpose of this study was to investigate a summer orientation program and measure its effectiveness on retention, attrition, and academic performance of entering college freshmen. The results from this study will provide information about the degree of success of summer orientation programs in fostering retention and improving academic performance that will be of use in implementing future orientation programs.

The target population identified in this study was graduated high school students entering college for the first time. The students were identified by ethnic group and educational status, that being grade point average, high school rank, ACT and/or SAT test scores. The statistical analyses used in this study were t-tests, ANOVA, and Chi-square.

Objectives of this Study

1. To determine if orientation programs are effective in the ultimate retention of students;
2. To examine the effect of participating in an orientation program on academic performance;
3. To examine if participating in an orientation program specifically developed for educational disadvantaged minorities aid in the enhancement of self-image;

4. To determine if orientation programs actually facilitate the smooth transition into college life.

Orientation programs have several purposes, all of which or only some that may be fulfilled. A major factor of orientation programs is the length of program. Additional factors may be the population to be served and the degree to which the population may be academically, emotionally, financially, and psychologically (i.e., mature) prepared to attend college. Taken into account is the fact that these factors vary from individual to individual and are unique unto each one.

For the purpose of this study, a sample of ethnic minority students was selected to determine if by participating in a summer orientation program, they would retain in college and complete a degree program and also if their academic performance would be as competitive as those students who did not participate in the summer orientation program. In order to determine an accurate measurement if the efficaciousness of the summer orientation program, the researcher has selected the following hypotheses to be tested.

Hypotheses to be Tested

The following hypotheses were tested in this study relating to the effectiveness of a summer orientation

program in student retention and competitive academic performance of freshmen minority students.

Hypothesis one

There is a significant difference in academic performance as a result of their participation in a summer orientation program as characterized by

- a. grade point average
- b. test scores

Hypothesis two

There is a significant difference in student retention as a result of their participating in a summer orientation program when the three groups are compared as determined by

- a. continuing in the institution
- b. successful completion of first semester

Hypothesis three

There is a significant difference in academic performance as a result of their participation in a summer orientation program with respect to gender.

Hypothesis four

There is a significant difference in student retention as a result of their participation in a summer orientation program with respect to gender.

Hypothesis five

There is a significant difference in academic performance as a result of their participation in a summer orientation program with respect to previous academic performance as characterized by

- a. high school grade point average
- b. high school rank
- c. high school semesters of credit

The purpose of the hypotheses are as follows:

Hypothesis one was tested to determine if participation in a summer orientation program enhanced the academic performance of the minority students. Such characteristics included: grade point average, study and learning skills, and test scores.

Hypothesis two was tested to determine if participation in a summer orientation program aided in student retention by investigating if the students continued in their program and completion of their first semester.

Hypothesis three was tested to determine if there was a significant difference in gender of participants of the summer orientation program and how it related to academic performance.

Hypothesis four was tested to determine if there was a significant difference in gender of participants of the

summer orientation program as it relates to student retention.

Hypothesis five was tested to determine if there was a significance related to academic performance of participants in the summer orientation program that pertained to previous academic performance.

The foregoing hypotheses were tested to investigate the effectiveness of orientation programs on academic performance and student retention. This information will contribute knowledge to administrators in developing orientation programs designed to ease the transition to the university and aid in student retention.

Limitation of Study

This study was limited to ethnic minority students who participated in a summer orientation program. Comparisons were made within group between males and females, but not between groups between minority and majority students. Another limitation is the small number of our sample.

REVIEW OF LITERATURE

A review of literature was conducted to identify information regarding the effectiveness of orientation programs on student retention and academic performance. A computer bibliographic data base system was used: Education Resource Information Center (ERIC). This data base system was used to identify specific information related to minority students and orientation programs.

The following descriptors were used throughout the review: (1) minorities, (2) orientation programs, (3) higher education, (4) academic persistence (retention), and (5) student attrition. After the articles, research papers, and books containing any of these descriptors had been identified, the materials were reviewed to find information pertinent to the research topic.

In order to examine the effectiveness of orientation programs on student retention and academic performance, it was necessary first to understand the purpose and function of orientation programs. With this understanding, it was then possible to examine other institutions who had utilized orientation programs and their outcomes (i.e., effectiveness). These three areas combined provided the background information for this study which examined the effectiveness of orientation programs on student retention and academic performance.

Purpose and Function of Orientation Programs

The serious student comes to the university for a very definite purpose. He/She desires to have their intellectual curiosity stimulated. He/She wants to learn as much about themselves and the people around them as possible. He/She believes that a college education is one of the first steps in their progression through life, not an end in itself. If the university can stimulate the students' thoughts, educate their tastes, and broaden their outlook, then it has gone a long way toward justifying its existence (Bennett, 1933). The freshman experience is thus crucial to the university and the student. During this time, the student's critical attitude toward his studies and the university in general is formed and the university must demonstrate the relevancy of liberal learning to a ready-to-believe-but-not-yet-convinced student audience (Committee on the Student in Higher Education, 1968).

Terman (1933) recognized the need for orientation courses due to the sharpened influx of students and the rapid increase in university attendance. Many youths entering a university, perhaps away from their home for the first time, feel the impulse to assert their independence (Bennett, 1933). Entrance into a university will mean different things to each individual, since each brings a

different past to their new experiences in college (Bennett, 1941; Doermann, 1926).

College/University is a new word for the freshman. Adjustments must be made. The university may aid him/her but the problem of adjustment is one that must be solved for themselves (Doermann, 1926). The university must realize that only insofar as it assists the freshman in making these discoveries can it be laying the foundation for permanent values to be derived from a college education (Committee on the Student in Higher Education, 1968; Doermann, 1926). No orientation will be effective which does not grow out of an appreciation of personal qualities; an evaluation of past experiences; the degree to which these are related to and modify the present; and the bearing of both past and present on the future (Doermann, 1926). Therefore, orientation should be concerned with (1) introducing the student to the outstanding problems of contemporary civilization and (2) the more personal and immediate problems of the entering student, such as orientation to college life, methods of study, principles of mental hygiene, life goals and values, analysis of the student's interests and abilities, the choice of a vocation, etc. (Doermann, 1926; Terman, 1933).

In order to examine why orientation programs are implemented we must first understand the student and their development through life and college. Theorists have given

us many developmental models upon which to draw from (Chickering, 1969; Erikson, 1964; Katz, 1968; Keniston, 1971; Marcia, 1966; Sanford, 1966).

Nevitt Sanford (1966) has probably argued more than other theorists that an institution should be a developmental community. Sanford (1966) has stated that "in order for the college to lead the student toward greater development, it must present him with strong challenges, appraise accurately his ability to cope with challenges, and offer him support when they become overwhelming" (p. 144). Hence, the developmental community would require knowledge that describes (1) who the college student is in developmental terms, (2) how development occurs, (3) how the college environment can influence student development, and (4) toward what ends development in college should be directed (Knefelkamp, Widick, & Parker, 1978).

Erik Erikson describes individual development from a psychosocial viewpoint. Erikson (1968) maintains that progress through life comes about by interaction with family, peers, and society. Erikson's (1964) model of individual development diagrams this progression through the ordered pattern in eight stages of identity. These eight stages cover from the first year of life to the years of old age. While a discussion of each stage would exceed the purpose of this paper, it is important and relevant to this

study to examine the fifth stage of identity since it deals with adolescence (young adulthood) years. Erikson (1964) notes that at this transitional life phase, the individual is developing a mind capable of abstract, reflective thought and is also realizing internal changes and external demands that will not let him return to childhood existence. The individual must ask and answer the question "who am I?" while trying to make sense of himself if he is to manage the complexities of adulthood effectively (Erikson, 1964). The individual must also establish a vocational goal for this will lead him to the establishment of a sense of identity (Erikson, 1964).

Chickering (1969) and Keniston (1971) have taken Erikson's identity stage further to include the college years. Keniston (1971) argues that during the college years, there is a tension between what the individual wants and what society demands. This is evident when students get in certain majors, go to certain graduate/professional schools to get "successful" jobs in order to meet societal demands when it may not be what they really want (Knelfelkamp et al., 1978). Chickering (1969) sees the college years as a time when students are meeting their own needs and capabilities by interacting with demands of a particular university environment. Chickering (1969) postulates seven vectors of development that outline an

individual growth which would include differentiation, integration, maturation, and stimulation. They are: (1) developing competence, (2) managing emotions, (3) developing autonomy, (4) establishing identity, (5) freeing interpersonal relationships, (6) developing purpose, and (7) developing integrity. Chickering emphasized that students are developmentally diverse; that is to say, that each student may accomplish different phases at different times. Kniefelkamp et al. (1978) suggest that since freshman year is usually the time when attention is centered on issues of competence, managing emotions, and autonomy, orientation programs may be more effective if they address academic/social competence issues rather than issues of intimacy or vocational decision-making.

Chickering (1969) also outlines six components of the university environment which may influence student development. They are: (1) clarity and consistency of objectives, (2) size of institution, (3) curriculum, teaching, and evaluation, (4) residence hall arrangements, (5) faculty and administration, and (6) friends, groups, and student culture. Each of these components influences vector development. The resultant experiences and the task demands of learning and living in the university environment both encourage development along the vectors.

Pantages and Creedon (1978) conducted a study that showed that for every 10 students who enter college, only four will graduate four years later from that college. The fifth student will require additional years in order to graduate. Of the other five students who dropped out, eventually two will reenroll in other schools and finally receive a college degree. If one examines black attrition, the situation becomes more distressing. Black students on both black and white campuses drop out at high rates, particularly in nontraditional fields for blacks such as in medical and dental schools. In engineering, blacks comprise only 4.9% of freshmen, but only 1.9% of these completed programs and received degrees (Change, Oct. 1979). Retention is more difficult in mathematics and the sciences because of the importance of strong secondary school foundations in these areas.

Pervin, Reik, and Dalrymple (1966) found that significant personality and attitudinal differences existed between college persisters and college dropouts. Vaughn (1968) suggested that dropouts tended to be more impulsive than persisters, lacked in depth emotional commitment to education and were unable to profit much from their past experience. Pandey (1973) conducted a dropout study in which he compared scores obtained from the 16 Personality Factor Questionnaire of 350 students in three academic

categories: good, dropout, and probationary. His results showed that both students in good standing and dropouts were intelligent, conscientious and of high superego strength. However, the good students were humble and submissive while the dropouts were assertive, stubborn, and independent. The latter characteristics also described students on probationary status, with the difference that dropouts were more intelligent and of stronger superego strength.

Williams (1971), in a study of the effect of group counseling on academic performance and persistence of black college freshmen, found that those exposed to the group counseling treatment showed significant improvement in academic performance but not in persistence in college. While a student's academic achievement is positively related to whether he or she continues in school, Astin (1973) has found that there is a higher than predicted attrition rate among scholastically high-achieving students. Hence, poor grades are not sufficient in and of themselves to cause attrition, but must be coupled with nonintellective factors (e.g., motivation, commitment to a particular college, and competence). Rossman and Kick (1970) discovered that black students with a moderate commitment to their college along with high academic competence characterized persisters as compared to dropouts who have low competence and low commitment. This may provide a partial explanation as to

why predominantly black colleges have a lower attrition rate.

Even though parents were instructing their children to attend a black college or university, Bayer and Boruch (1969) indicated that only 13% of these youth had educated parents. Jaffe's (1968) study of ethnic education reported that only three-fourths of blacks attending college were in the top half of their high school class. When comparisons were done between blacks and whites attending college, blacks scored in the bottom half of their class on test scores nationally (Thompson, 1978).

Because of the low socio-economic background of students attending black colleges and universities, the faculties of these institutions dedicated themselves to a highly personalized approach to teaching. Black colleges accepted students and concentrated on their needs, and worked toward preparing them to function in society. Students and faculties of these institutions, as indicated by Mays (1978) would be more likely to press for changes within institutions.

Orientation courses and special programs for entering students were a feature of colleges and universities in their early years (Bennett, 1933; Doermann, 1926). After the decline of the right to fail era of the 1960s and 1970s, orientation has made a notable comeback (Cohen, Winter

1984-85). All the programs have the intent of providing the students with a program-affiliated identity early on, assisting students with their career and academic goals, and above all, encouraging them to maintain continuing enrollment in courses in which they have a chance for success (Cohen, Winter 1984-85). Orientation, early intervention, tutorial activities, and integrated support services are some of the various strategies to help students stay in school and complete courses successfully (Cohen, Winter 1984-85). In addition, the traditional pattern of testing students at entry and placing them in special courses is also utilized.

Whether for the educationally motivated reasons of assisting learning or the institutionally motivated reason of maintaining high enrollments in the face of a declining population, the various strategies above seem destined to spread and accelerate during coming years (Cohen, Winter 1984-85). Some of the interventions will prove to actually assist the students in retention and improving academic performance.

Roueche (1984) conducted a nationwide study to examine how U.S. colleges and universities organize, staff, and operate their various programs to meet the needs of the low-achieving student and to document the extensive literacy problem facing all institutions of higher education. Among

selected findings, the author found that of the 1,452 institutions who responded, (1) public institutions and larger colleges were more likely to respond to low-achieving students, (2) basic skills courses were the most typical response to low-achieving students, (3) more than 50% of the institutions offered orientation programs for low-achieving students, (4) the most common retention strategies included orientation programs, special services for low-achieving students, and institutional self-study, and (5) respondents reported plans to improve programs, though they projected staff reductions in some areas.

Rolf Groseth and Ralph Brigham (1984) conducted a study to determine whether students who came to the extended programs in the summer were doing any better than those who attended the "old style" large group sessions just before the beginning of classes in the fall. The two categories of students were followed to determine success in college as measured by grade point average and persistence toward degree. Their findings showed that (1) the institution lost only 5% of the summer students after the first quarter compared to 15% of the September students; (2) that 73% of the summer students returned for the second year compared to 55% of the September students; and (3) that students who attended the extended summer orientation programs exceeded their projected grade point average by .38, while those who

attended in September fell short of their projected grade point average by .06. These findings seem to clearly indicate that the summer orientation had a powerful impact on grade point average and persistence toward degree.

Similarly, Donnangelo and Santa Rita (1982) described a ten-week orientation course at Bronx Community College (New York), showing how students who participated in the program intended to stay in school and make higher grades than those who did not enroll or who dropped out of the orientation sequence early on. Other studies of institutions who have developed summer orientation programs tend to support the aforementioned findings (Hall, 1981; Myers & Drevlow, 1982; Suhr, 1980).

Summer Enrichment Program

This study examines a six-week summer orientation program at Iowa State University, the Summer Enrichment Program (SEP). The Office of Minority Student Affairs initially sponsored SEP during the second summer session of 1981. In 1987, SEP began June 12, 1987 and ended July 31, 1987. It was directed by Dr. George A. Jackson and coordinated by Carol Mahan and Connie Hanks, Program Coordinators for Minority Student Affairs.

SEP is an intensive orientation for students who have been admitted to Iowa State University. SEP provides entering college students an opportunity to further develop

skills which will enhance their academic abilities and personal development. They receive curriculum and vocational counseling, as well as workshops, lectures, and seminars. As first-time, full-time students, SEP participants are required to take no less than two (2) courses. This enables faculty and staff interaction with the participants and makes the program ongoing and committed to and with university goals and aims. Participants could take courses which included math, English, and psychology. These courses were scheduled based on demonstrated strengths and weaknesses and choice of major. Classes were arranged on an individual basis with consultation from the appropriate college. The participants also had the opportunity to engage in various social and cultural activities that were planned for them.

Newly admitted students are sent SEP informational brochures from the Minority Student Affairs Office. They acknowledge their interest by completing and returning the postpaid application portion of this brochure. Tuition, fees, room and board were paid and all books were provided on a loan basis. The only costs to the students were transportation to and from the university, their own telephone bills, a summer health fee, money for their personal expenses. Thus, the program was virtually cost-free to the students.

METHODOLOGY

The purpose of this study was to examine the effectiveness of summer orientation programs on student retention and subsequent academic performance of minority students at a Midwestern, land-grant science and technology university.

Selection of Participants

The participants for the SEP 1987 are students who have been admitted to Iowa State University. These persons are sent a SEP informational brochure from the Office of Minority Student Affairs. Students acknowledge their interest by completing and returning the postpaid application portion of this brochure. Participation is on a voluntary basis only. The admission status of the participants are regular admit and lower 1/2 category.

Statistical Analysis

Three statistical methods were used to analyze data regarding SEP participants. These methods were (1) t-test, (2) analysis of variance (ANOVA), and (3) chi-square. The t-test was used to analyze information regarding sex of the participant. The ANOVA was used to analyze data regarding grade point averages, high school rank, total semesters of credit, ACT/SAT scores, and admission status. The chi-square was used to analyze data regarding retention.

The participants of the Summer Enrichment Program were given a battery of tests upon entering the program. This was done to give the program staff an idea of which specific areas each student needed more focus on. The tests include: Nelson-Denny Reading Test, Strong-Campbell Interest Inventory, Assertiveness Inventory, Brown-Holtzman Study Habits Inventory, Needs Assessment, Communicative Behavior Inventory, and List of Self-Verbalizations.

The Myers-Briggs Type Indicator (MBTI) was also administered to the SEP participants. The MBTI is a psychometric questionnaire that is probably the simplest and most reliable method of determining a person's type based on Jungian theory (Myers & McCaulley, 1985). Many of the insights into the role of personality in influencing human behavior have been developed from research with the Type Indicator. Wherever it is used, the MBTI helps people become aware of their personality preferences and how these preferences affect their approach to education (i.e., learning and teaching styles). Because it is easy to administer, professionally interpreted, and well researched, the MBTI can generate reliable data for organizational development (Myers & McCaulley, 1985).

Use of the Type Indicator enables us to identify specific personality differences in individuals and to cope with the differences in a constructive way. These basic

differences concern the way people prefer to use their minds, specifically the way perceive and the way they make judgments. Together, perception and judgment, which makes up a large portion of people's total mental activity, govern much of their outer behavior, because perception - by definition - determines what people see in a situation and their judgment determines what they decide to do about it (Myers & McCaulley, 1985).

One means of perception is by sensing, a way we become aware of things directly through our five senses. The other is the process of intuition, which is indirect perception by way of the unconscious, incorporating ideas or associations that the unconscious tacks on to perception coming from outside.

One means of judging is by the use of thinking. The other is by feeling. Most people would agree that they make some decisions with thinking and some with feeling, and that the two methods do not always reach the same result from a given set of facts.

Another basic difference in people's use of perception and judgment arises from their relative interest in their outer and inner worlds. Introversion is one of two complementary orientations to life: its complement is extraversion. The introvert's main interests are in the inner world of concepts and ideas, while the extravert is

more involved with the outer world of people and things. Therefore, when circumstances permit, the introvert concentrates perception and judgment upon ideas, while the extravert likes to focus them on the outside environment.

All hypotheses were tested at a .05 level of significance. The dependent variables tested were academic performance and retention rate and the independent variables were other characteristics such as gender, educational backgrounds, admission status, etc.

Hypothesis One

There is a significant difference in academic performance with respect to their participation in a summer orientation program as characterized by

- a. grade point average
- b. test scores

Statistical procedures used to test these findings were t-test and ANOVA.

Hypothesis Two

There is a significant difference in student retention with respect to participating in a summer orientation program when the three groups are compared as determined by

- a. continuing in the institution
- b. successful completion of first semester

Statistical procedure used to test these findings was the chi-square.

Hypothesis Three

There is a significant difference in academic performance with respect to participating in a summer orientation program in regard to gender. The t-test and ANOVA were used to test this hypothesis.

Hypothesis Four

There is a significant difference in student retention as a result of participating in a summer orientation program in regard to gender. The t-test and chi-square were used to test this hypothesis.

Hypothesis Five

There is a significant difference in academic performance as a result of participating in a summer orientation program with respect to previous academic performance as characterized by

- a. high school grade point average
- b. high school rank
- c. high school semesters of credit

Statistical procedures used to test this hypothesis were t-test and ANOVA.

Summary

Results of this study examined how participation in a summer orientation program might lead to improved academic performance and increased student retention. Various statistical analyses were used depending on information obtained about participants.

RESEARCH FINDINGS AND ANALYSIS

Introduction

The purpose of this study was to examine the effectiveness of orientation programs on the retention and/or attrition and subsequent academic performance of students matriculating in a Midwestern, land-grant science and technology university. In Summer 1987, 41 students arrived at Iowa State University to participate in the Summer Enrichment Program (SEP). Two students left before completing the program. These two students' files were not included in the study.

Description of Participants

The participants of SEP (Group A) ranged in age from 16-19, with the majority (48.7%) being 18 years of age. Group A consisted of 18 black females, 16 black males, 1 Hispanic female and 4 Hispanic males. The mean high school grade point average was 2.41 with a range from 1.41 to 3.69. The mean high school rank was 41.6 with a range from 2 to 86.

Two control groups were employed in this study: (1) minority students who did not participate in SEP (Group B) and (2) majority students who did not have any orientation to Iowa State University (Group C). Group B ranged in age from 17-19, with the majority (50%) being 18 years of age.

Group B consisted of 16 black females, 19 black males, and 4 Hispanic males. The mean high school grade point average was 2.64 with a range from 2.03 to 3.17. The mean high school rank was 38.2 with a range from 1 to 78. Group C consisted of 22 Caucasian males and 17 Caucasian females. The mean high school grade point average was 3.25 with a range from 2.40 to 3.93. The mean high school rank was 23.4 with a range from 3 to 50.

Hypotheses--Statistical Findings

Hypothesis one

There is a significant difference in academic performance with respect to their participation in a summer orientation program as characterized by (a) grade point average and (b) test scores.

Grade point average Following an overall ANOVA ($F(2,113) = 5.68, p = .004$), Tukey's HSD tests were performed. There was a significant difference at the .05 level of significance in academic performance between Group A and Groups B and C. There was no significant difference at the .05 level of significance in academic performance between Group B and Group C (Table 1).

Test scores There were significant ACT composite mean differences in academic performance with respect to participation in a summer orientation program between Groups

Table 1. Fall grade point averages of Groups A, B, and C

Group	Number	Fall GPA Mean	Standard Error
A	38	1.61	0.16
B	39	2.12	0.13
C	39	2.28	0.15

A and B to Group C, but no significant (HSD) difference exists between Group A and Group B (Table 2); overall $F(2.96) = 20.43, p = .0001$).

Hypothesis two

There is a significant difference in student retention with respect to participating in a summer orientation program when the three groups are compared as determined by (a) continuing in the institution and (b) successful completion of first semester.

Continuing in the institution There seemed to be no significant difference in student retention with respect to participating in a summer orientation program when the three groups are compared ($\text{Chi-square } (2) = 0.67, p = .717$). Each group had expected counts less than 5 which militates against drawing clear conclusions. Group A had a retention rate of 97.4% for the fall semester and 92% for the spring

Table 2. ACT scores of Groups A, B, and C

Group	Number	ACT English Mean	ACT Math Mean	ACT Social Science Mean	ACT Natural Science Mean	ACT Composite Mean
A	29	17.6	13.2	15.1	18.9	16.4
B	27	17.9	15.7	16.9	20.0	17.7
C	39	21.4	23.6	22.3	25.8	23.5

semester. Group B had a retention rate of 90% for the spring semester and Group C had a retention rate of 95% for the spring semester (Table 3).

Successful completion of first semester There was a significant difference (Chi-square (1) = 8.53, $p = .004$) in student retention in regard to successful completion of first semester with respect to participating in a summer orientation program. Group A had 50% of its returning students for the fall semester attain a C- (1.67 = 4.0) grade point average or better. Group B had 77% of its students attain a C- grade point average or better for the fall semester. Group C also had 77% of its students attain a C- grade point average or better for the fall semester.

Table 3. Analysis of student retention for spring semester for Groups A, B, and C

Group	Number completed SEP	Number enrolled in Fall	Number returned in Spring
A	39	38	35
B		39	35
C		39	36

Hypothesis three

There is a significant difference in academic performance with respect to participating in a summer orientation program in regard to gender.

There was no significant difference in academic performance (Table 4) in regard to gender in any of the groups ($p > .05$). It may be interesting to note that in Group A and Group C, the females had a slightly higher mean fall grade point average, but the male students in Group B had a slightly higher mean fall grade point average. In looking for gender differences across groups (Table 5), there was no significant difference in academic performance ($p > .05$). Again, an interesting note is that across

Table 4. Analysis of males' and females' fall grade point averages of Groups A, B, and C

Group	Sex	Number	Fall GPA Mean	Standard Error
A	Male	19	1.58	0.205
	Female	19	1.64	0.244
B	Male	23	2.37	0.160
	Female	16	1.85	0.223
C	Male	22	2.25	0.198
	Female	17	2.32	0.232

Table 5. Analysis of males' and females' fall grade point averages across groups

Sex	Number	Fall GPA Mean	Standard Error
Male	64	2.07	0.114
Female	52	1.93	0.139

groups, males had a slightly higher mean fall grade point average than females.

Hypothesis four

There is a significant difference in student retention as a result of participating in a summer orientation program in regard to gender.

There was no significant difference between males and females in student retention in any of the three groups (Table 6; $p > .05$). Each group has expected counts less than 5 which does not permit clear conclusions. Group A had 95% females and 100% males return for fall semester and 89% females and 95% males return for spring semester. Group B had 88% females and 91% males return for spring semester. Group C had 88% females and 100% males return for the spring semester. Across all groups, 88% females and 95% males returned for the spring semester (Tables 7; $p > .05$).

Hypothesis five

There is a significant difference in academic performance as a result of participating in a summer orientation program with respect to previous academic performance as characterized by (a) high school grade point average, (b) high school rank, and (c) high school semesters of credit.

Table 6. Analysis of retention rates between males and females for Groups A, B, and C

Group	Sex	Number completed SEP	Number enrolled in Fall	Number returned in Spring	P-value
A	Male	19	19	18	0.547
	Female	20	19	18	
B	Male		23	21	0.700
	Female		16	14	
C	Male		22	21	0.105
	Female		17	15	

Table 7. Analysis of retention rates between males and females across groups

Sex	Number enrolled in Fall	Number returned in Spring	P-value
Male	63	60	0.178
Female	52	46	

High school grade point average There was no significant difference in the fall grade point average-high school grade point average correlation between SEP and non-SEP students ($z = 0.95, p > .05$). All groups decreased in grade point averages from high school to fall semester when mean fall grade point averages were compared (Table 8).

High school rank There was no significant difference in the fall grade point average-high school rank correlation between SEP and non-SEP students ($z = 0.22, p > .05$).

High school semesters of credit There was a difference in the fall grade point average-high school semesters of credit correlation between SEP and non-SEP students. A correlation summary was conducted on high school grade point average, high school rank, and high school semesters of credit to fall grade point average (Table 9). The summary suggests (1) a positive relationship of fall grade point average with high school grade point average, (2) a negative relationship of fall grade point average with high school rank, and (3) a positive relationship of fall grade point average with high school semesters of credit. Also noted was that high school grade point average and high school rank were highly correlated. When comparing correlational relationships by group, the same relationships were suggested as mentioned above except for Group B. There was a greater variability in high school

Table 8. Comparison of previous academic performance with fall grade point average for Groups A, B, and C

Group Number		High School GPA Mean (Standard Error)	High School Rank Mean (Standard Error)	High School semesters of credit (Standard Error)	Fall GPA Mean (Standard Error)
A	38	2.41 (0.13)	41.64 (4.39)	14.78 (0.74)	1.61 (0.61)
B	38	2.64 (0.07)	38.24 (3.04)	13.87 (0.79)	2.12 (0.13)
C	39	3.25 (0.08)	23.38 (2.50)	18.97 (0.67)	2.28 (0.15)

Table 9. Analysis of variance relating high school performance to fall grade point average

Variable	DF	t	P-value
HS GPA	1	1.86	0.066
HS Rank	1	-0.19	0.849
Total CR	1	1.58	0.118

grade point average for Group B than for Groups A or C which might explain the exception (Tables 10 and 11). The same correlational relationships were suggested as above when all factors were compared by sex between and within groups.

Additional Findings

This study also examines how SEP participants were prepared emotionally, mentally and personally with respect to reading skills, communication skills, level of self-esteem, assertive ability, and interest indexes. The SEP participants were given the Nelson-Denny reading test to determine overall, as well as individual, reading ability. Results showed SEP students had a mean vocabulary score of 48. The mean comprehension score was 41 with the mean reading rate being 241. Further analysis showed no differences among males and females. Interesting to note is that while the differences were not significant, females scored slightly higher in the comprehension subtest and reading rate, but males scored slightly higher in the vocabulary subtest.

The Strong-Campbell Interest Inventory was given to examine where group and individual interest were located. Results showed that in outdoor and technical interests (Realistic index), the majority (38%) had a low response. In scientific and inquiring interests (Investigative index), the majority (67%) had an average response. In dramatic and

Table 10. Overall correlation summary of high school performance with fall grade point average

	Fall GPA (P-value)	HS RANK (P-value)	HS GPA (P-value)	TOTAL CR (P-value)
Fall GPA	1.0000 (.0000)	-0.3785 (.0001)	0.4779 (.0001)	0.3214 (.0005)
HS RANK	-0.3785 (.0001)	1.0000 (.0000)	0.8375 (.0001)	-0.3644 (.0001)
HS GPA	0.4779 (.0001)	-0.8375 (.0001)	1.0000 (.0000)	0.5637 (.0001)
TOTAL CR	0.3214 (.0005)	-0.3644 (.0001)	0.5637 (.0001)	1.0000 (.0000)

Table 11. Overall summary of high school performance with fall grade point average

Variable	Number	Mean	Standard Deviation
FALL GPA	116	2.01	0.951
HS RANK	116	34.39	22.476
HS GPA	88	2.81	0.63
TOTAL CR	114	15.87	5.02

self-expressive interests (Artistic index), helping and people-oriented interests (Social index), persuasive, political, and power-oriented interests (Enterprising index), and organizational and clerical interests (Conventional index), the majority (50%, 65%, 50%, and 53%, respectively) showed an average interest. In the enterprising theme, 33% showed a moderate high interest. Comparing male and female interests, females showed an overall average interest (70%) in social theme, whereas the males tied overall average interests (56%) in three categories: investigative, social, and enterprising. Interesting to note is that in the conventional theme, 18% females showed a high interest compared to 20% males.

The SEP participants were given a needs assessment inventory to determine whether there was a need for any particular type of counseling. Results showed that 69% of the participants were labeled "okay" and 31% of the participants showed a need for some amount of personal, academic, and/or career counseling. Results of the Communicative Behavior Inventory showed 72% of the participants as having good communication skills, whereas 28% showed a tendency to talk too much, reluctance to talk with others, difficulty in expressing their ideas and/or insecurity in their behavior. Responses to the List of Self-Verbalizations indicated that 36% of the participants

showed positive attitudes whereas 64% worried about their performance, negative outcomes, bodily reactions, and/or how others are doing. The majority (39%) of those who worried did more so about negative outcomes than the other three categories with performance (28%) second.

Results of the Assertive Inventory showed 75% of the participants as having good assertive abilities, 8% showing average abilities, but needed a little training, and 17% showing a definite need for assertive training. There seemed to be no significant difference between males and females, although more females showed the need for assertive training.

The Myers-Briggs Type Indicator results showed that between introversion and extroversion, 70% of SEP participants were extroverts and 30% were introverts. Females (70%) tended to be more introverted and males (52%) slightly more extroverted. Between sensitive and intuitive types, 67% were found to be sensitive and 33% intuitive. Females (59%) tended to be more sensitive and males (55%) tended to be more intuitive. Between the feeling and thinking types, 55% of SEP participants were found to be thinkers, whereas 45% were feelers. Interestingly, females (61%) tended to be more thinkers, whereas males (53%) tended to be more feelers. In the judgment versus perception scale, results showed that 64% of the SEP participants had a

judging attitude, whereas 36% had a perceptive attitude. Females (62%) tended to have a judging attitude, whereas males (58%) tended to have a perceptive attitude.

The overall group type is categorized as ESTJ. This indicates that they may be analytical and impersonal; may be executive, legal, technical, or interested in reform, organize the facts; decisive, logical, strong in reasoning power; and aim to govern their own conduct and other people's in accordance with thought-out conclusions. Because of the judgment preference, this group must develop a good perceptive auxiliary to give them grounds for judgments and must learn to suspend judgment long enough to give perception a chance. Not only will better perception make their judgments sounder, but if they use it to see other points of view, it will help them in human relations, where they may well need help. It is clear that the undergraduate educational program at Iowa State University attracts many students who tend to be practical and matter-of-fact, and they successfully use their abilities in technical skills dealing with facts, objects, and money. These students like to organize and prefer to lead instead of follow.

The EST types like to organize the situation itself and get it moving, which is particularly useful in business and industry. They also tend to be more interested and

effective when things are happening all around them and they are working actively with objects or people. This points to the need within the orientation program for workshops or seminars which aid the students in becoming cognizant of their type and style for learning and working with other individuals. This could also be helpful in planning future orientation programs, use of materials to advertise programs, and making curriculum decisions based on individual/group type and style.

Knowledge of type could assist faculty, staff, counselors, and others in deciding hiring implications with additional information. Faculty knowledge of type and positive value when applied to the classroom setting would assist in developing a more effective educational program. Knowledge of type characteristics would also have implications for residence hall arrangement. Roommate assignments would be made which would reduce the chance of conflict between the individuals. Other orientation program implications could include holding government office on campus, involvement in a fraternity or sorority, participation in clubs or other organizations, etc. This would all be effective for faculty and counselors in being supportive of the students, knowing how to work with them and selecting compatible educational curriculums and advisors.

SUMMARY, CONCLUSION, AND RECOMMENDATIONS

Summary and Conclusions

The purpose of this study was to examine the effectiveness of orientation programs on the retention and/or attrition and subsequent academic performance of students matriculating in a Midwestern, land-grant science and technology university. This study was selected because of the growing interest in how minorities are competing at Midwestern, land-grant institutions and the impact of orientation programs on them. Minority students are facing a state of transition. Society's attitudes are constantly changing and female minorities are faced with two obstacles to overcome: the stigma of being a minority as well as being a female. Minority students have been and are changing their perspectives toward achieving a higher education in today's society. The increased number of minorities who received master's degrees and above and obtain successful jobs is a concrete indication of some of these changes.

This study examines one segment of the target population of orientation programs--minorities. Given the purposes of orientation programs and the increased desire of institutions to retain students in academic programs, information regarding the effectiveness of orientation programs in student retention and academic performance of

minority students was needed because it would (1) aid in strengthening/evaluating the Summer Enrichment Program at Iowa State University, (2) assist the Office of Minority Student Affairs in program design and future implementation of SEP, (3) provide information about the degree of success of summer orientation programs in fostering retention and improving academic performance, and (4) aid in reducing attrition.

The objectives of this study were to examine the effect of participating in a summer orientation program specifically designed for educationally disadvantaged or low-income minorities on academic performance and retention. It was important to determine how the summer orientation program impacted these students. An examination of the academic background information on these students aided in determining previous academic performance and ability.

The sample population for this study consisted of black and Hispanic students at a Midwestern, land-grant science and technology university. These students were first-time, full-time freshmen enrollees at the predominantly white institution.

The primary objectives of this study involved examining various academic background information about the ethnic minority students. This information included: (1) high school grade point average, (2) high school rank, (3) high

school total semesters of credit, (4) ACT scores, and (5) admission status into the university. The information collected indicated that the participants of SEP (Group A) had competitive high school academic performance with that of the minorities who did not participate in SEP (Group B). Furthermore, the means for all the high school categories were not significantly different when Groups A and B were compared to the majority students who had no orientation to the university (Group C). The results showed that Group C performed higher in each high school category. The comparisons of ACT scores for all groups revealed that Group A had lower subtest scores and composite score than both Groups B and C. This supports the findings of Suhr (1980) that, of the Fall 1978 EOP special action freshmen, those who participated in summer STEP had lower high school grade point averages and lower test scores (SAT) on the average than students who began orientation in the fall.

Analysis of information pertaining to the academic performance of the SEP participants (Group A) compared to the other groups revealed that Group A had significantly lower fall grade point averages than Groups B or C. However, Group B did not differ significantly from Group C - the difference between the two means was only .16. When grade point averages were compared from high school, summer orientation, and fall semester for the SEP participants,

results showed an increase in mean grade point average from high school to summer orientation, but a decrease from summer orientation to fall semester. This seems to suggest a somewhat momentary effect of orientation on academic performance. However, when mean high school grade point average was compared with mean fall grade point average for all groups, the results showed that all groups decreased significantly from mean high school grade point average to fall grade point average. Interesting to note is that while Group A had the highest difference (.80) of the two means, Group C differed only .03 from Group A. This also supports the findings of Suhr (1980) who found no significant difference in academic performance between those who are participating in the summer orientation and those who participated in the fall. This conflicted with findings of Donnangelo and Santa Rita (1982) and Jones (1984) who reported similarly of improved academic performance of the participants of summer orientation programs.

The information collected on the retention of the SEP participants revealed no significant difference between the number of Group A students who returned in the spring and that of Groups of B and C. Group C had a slightly higher percentage of students return than Group A who had a slightly higher percentage of students return than Group B. It would seem that SEP participation does not have a

statistically significant effect on retention; however this finding is tentative because it is based on one semester enrolled, the sample size is so small, and it does not exclude extenuating factors. This conflicted with the findings of Groseth and Brigham (1984), Jones (1984), and Suhr (1980) that summer orientation participation had a powerful impact on retention rates.

Analysis of information on admission status and resultant academic performance revealed that for Group A, with 59% of the participants as regular admits and 41% as lower 1/2 admits, both status groups showed a significant decrease in mean term grade point averages from summer to fall. The lower 1/2 admit group showed the higher decrease in mean grade point average. In regard to gender for each status group, Group A had 70% females as regular admits compared to 75% males as lower 1/2 admits. By comparison, Group B had 79% students as regular admits and 21% as lower 1/2 admits. In Group B, the males constituted the majority (58% and 63%, respectively) of the regular admits and lower 1/2 admits. Examining the overall comparison of each status group for Groups A and B, Group A had lower mean fall grade point averages for both regular and lower 1/2 admits. However, the difference was highly significant for the lower 1/2 status group than for the regular admit status group. This seems to indicate that admission status based on high

school performance does not necessarily predict college academic performance.

The information collected pertaining to the Nelson-Denny Reading Test revealed that the SEP participants had reading abilities slightly lower than 50% of the national norm in all categories except vocabulary. A study conducted by Robert Bergmann (1987) comparing Nelson-Denny reading test scores among regular freshmen, Summer Trial Enrollment Program (STEP) students, and Summer Enrichment Program (SEP) students revealed no significant differences in the comprehension or reading rate scores of the three groups. However, regular freshmen had significantly higher vocabulary and composite scores than either STEP or SEP. In comparing all subtest scores, no differences were found between STEP and SEP freshmen (Bergmann, 1987).

In a similar study conducted by Carol David (1988) evaluating English courses taken during the summer by SEP participants and doing a follow-up of English courses taken in the fall semester revealed that students who had English 99X or 104 during the summer and were placed in English 105 in the fall performed well. Students in English 99X during the summer receiving a C- (1.67/4.00) or below experienced difficulty in English 104 in the fall semester (David, 1988). The evaluation suggested that many SEP participants

required on-going counseling and assistance during their first semester (David, 1988).

The Summer Enrichment Program participants were asked to list three (3) reasons why they selected to participate in the summer orientation program. Out of a wide range of answers, the three most common responses were: (1) to get to know faculty, other students, and the university, (2) opportunity to get a headstart on their university education, and (3) see what life would be like at the university. These responses may assist in providing a direction for the aims and goals of future orientation programs.

Conclusion

The primary purpose of this study was to determine if the summer orientation program had an impact on improving academic performance and increasing student retention of ethnic minority students at a Midwestern, land-grant science and technology university. The review of literature revealed that while research in the general area of orientation programs was extensive, research on summer orientation programs designed for ethnic minorities revealed fewer studies and additional studies would contribute more knowledge towards effective implementation and evaluation of summer orientation programs designed to increase retention and improve academic performance of ethnic minority

students. This study attempted to provide an exploratory assessment of a summer orientation program and its effect on student retention and subsequent academic performance of minority students.

Studies in this area were needed because of the continual changes with minorities in higher education and the increasing demands of society on the successful achievement of college degrees by minorities. Summer orientation programs aimed toward minorities is one area of interest, but further research would provide a summary of how minorities are impacted by participating in a summer orientation program.

The participants of the Summer Enrichment Program showed an increase in summer grade point average when compared to high school grade point average, but decreased with fall grade point average. While all groups decreased in fall grade point average when compared to high school grade point average, SEP participants had the highest decrease of the three groups. Sex of participants did not prove to have a difference in academic performance.

When retention rates were compared for the three groups, there appeared to be no significant difference in the number of persisters per group. This finding is not conclusive because of the small sample size.

In summary, the SEP participants showed an overall decrease in academic performance; however, not more so than the other two groups. The majority of the SEP students do show promise on future academic ability, as measured by their obtaining a C- (1.67/4.00) grade point average at the end of the fall semester. Only 3% of the SEP participants left at the end of the summer program and an additional 5% left after the fall semester compared to 10% of Group B students and 5% of Group C students who left after the fall semester. This showed that the SEP participants exhibited equal persistence in the university.

Recommendations

In view of the findings of this study, several recommendations seem appropriate. They are:

1. Further studies should be conducted on the effectiveness of summer orientation programs on retention and academic performance of minority students. Research would indicate whether the programs are making the impact they should on the minority student.
2. Additional studies should be conducted to compare the goals and objectives of orientation programs designed for ethnic minority students with orientation programs designed for the general majority students to identify if any differences exist in terms of the effectiveness on retention and academic performance.

3. A study should be conducted to compare goals, objectives, and outcomes of summer orientation programs designed for ethnic minorities at Midwestern, land-grant, predominantly white institutions with summer orientation programs offered at predominantly black institutions.
4. Further research is needed that will explore internal variables (e.g., motivation, attitude, self-esteem) and their impact on academic performance and retention of minority students.
5. A follow-up study should be conducted on previous Summer Enrichment Program participants to measure a longer effect on academic performance and retention to provide more reliable and valid results.

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