STUDY SKILLS INSTRUCTION FOR DISADVANTAGED STUDENTS

by

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ABSTRACT

The purpose of this study was to determine if study skills instruction offered disadvantaged students during a summer orientation program at The University of Arizona resulted in higher earned grade point averages than could have been predicted when using ACT scores and high school averages. Sets of scores for three groups of students were analyzed, a group that experienced instruction, a group exposed to partial instruction (A Comp), and a group that had no contact with the program (B Comp).

The results show that earned grade point averages for the instructed group were statistically higher, at the 0.05 level of significance, than predicted. There was no statistically significant difference between scores for two comparison groups. The observable difference between scores for the B Comp group was 0.25, for the A Comp group 0.03, with the predicted scores higher in both cases.

In conclusion study skills instruction had a significant positive effect on the academic performance of that group of disadvantaged students who completed the instructional program. Results for the two comparison groups, while not statistically significant, indicate that some study skills instruction resulted in academic performance

at predicted levels while the group experiencing no instruction had lower earned grade-point averages.

CHAPTER I

THE PROBLEM AND THE HYPOTHESES TO BE TESTED

Introduction

Weigel and Weigel (1967) note that ". . . study skills and habits have long been considered to be important variables in the academic success or failure of students at the college level . . ." (p. 78). A general assumption held by supporters of programs for the disadvantaged is that culturally and/or financially disadvantaged individuals will also be academically disadvantaged. Many programs directed at those disadvantaged persons who are preparing for college, such as the New York City based program College Bound, have as an objective the improvement of the participants' study skills.

As part of the 1973 New Start Summer Orientation Program for disadvantaged students at The University of Arizona a Study Skills Seminar was offered to improve the study habits and skills of the participants. An objective of the seminar was to increase the participants' knowledge of study skills. This study measured the effectiveness of the Study Skills instructional program for disadvantaged students in terms of the academic performance of the participants.

Chapter I will include the statement and significance of the problem, the hypotheses to be tested, assumptions, limitations, and definitions. A resume of the literature on prediction of grade-point average, study skills instruction, and the disadvantaged student will comprise Chapter II. The third chapter covers research procedures, the design and method, treatment and analysis of data, a description of the population and the groups as well as the major findings. Conclusions, implications, and recommendations for future research are discussed in Chapter IV.

Statement of the Problem

Did the Study Skills Seminar offered disadvantaged students during the summer of 1973 affect the academic performance of those students who completed the course? The purpose of this study is to determine if a five-week course in Study Skills, taught to a group of disadvantaged students participating in the 1973 New Start Orientation Program at The University of Arizona, had a measurable effect on the grade-point averages, the number of students on the D-list, and the drop out rate when those students who completed the course are compared with a group who dropped the program as well as a non-participant comparison group.

Significance of the Problem

There are two major reasons for undertaking this study. First, the information acquired will serve as a justification for offering the seminar if it is concluded that there is a significant difference between the predicted and earned grade-point averages of the participants as measured against the two comparison groups. Secondly, positive findings would indicate that the program should be expanded as well as retained. Negative results could lead to a more detailed evaluation with subsequent improvement of the seminar.

Hypotheses to be Tested

The following hypotheses, which will order and give direction to the study, shall be tested:

Hypothesis 1

There will be no significant differences in the predicted grade-point averages and the earned grade-point averages for the first semester of the 1973-1974 academic year for the experimental group and the two comparison groups.

Hypothesis 2

There will be no significant difference in the number of students from the experimental and comparison groups on the mid-fall semester D-list.

Hypothesis 3

There will be no significant difference in the number of students from the experimental and comparison groups who did not register for the spring semester of the 1973-1974 academic year.

Assumptions, Limitations, and Definitions

Assumptions Underlying the Problem

1. Study skills can be taught.
2. Knowledge of good study skills is a prerequisite to their application in academic situations.
3. Application of good study skills results in high grades while maintaining poor study skills results in low grades.
4. High school grades and ACT scores combined are valid predictors of first semester freshman grade-point averages.
5. Motivational differences among members of the experimental and comparison groups are not significant.
6. Grade-point average is a valid measure of academic success.

Limitations

There are two types of limitations found in this study. One limitation deals with the predictability of grades:

1. The validity and reliability of high school grades and the ACT scores combined to be used as predictors of grade-point averages for the disadvantaged student have been questioned.
2. There are factors that are considered as influencing the predictability of college grades, such as the nature of the sample, characteristics of the institution and its students, and the range of talent and personal characteristics of the students, that will not be controlled variables in this study.

Other limitations deal with the sample:

1. The uncontrolled, unmeasured differences, or X-variables, characteristic of those students who completed the seminar, as contrasted with the comparison groups, may be more important in determining academic success than increased knowledge of study skills.
2. Generalizations from the study to the total freshman population at The University of Arizona will be limited.

Definitions

1. ACT--The American College Testing Program.
2. ACT Scores--English, Math, Social Science, Natural Science, and a Composite score.
3. Comparison Group A (A Comp)--This group consists of those disadvantaged students who enrolled in the Study Skills Seminar offered as part of the 1973 New Start Summer Orientation program but did not complete the course. They did enroll for the Fall, 1973 semester at The University of Arizona.
4. Comparison Group B (B Comp)--This group consists of New Start students admitted as freshmen in the fall of 1973, who did not participate in the summer program.
5. Disadvantaged Students--Culturally, economically, socially, and educationally handicapped individuals.
6. D-List--A list of those students earning D level or failing grades at the mid-semester grade report.
7. Dropouts--Those students who were in the original experimental and comparison groups who did not register for the Spring semester of the 1973-1974 academic year at The University of Arizona and officially withdrew from The University of Arizona.
8. Earned Grade-Point Average--First semester grade-point average, as reported by The University of

Arizona Registrar's Office, for those members of the experimental and comparison groups (4.0 = A, . . . 1.0 = D).

9. Experimental Group (Exper)--This group consists of those disadvantaged students who completed the Study Skills Seminar offered as part of the 1973 New Start Summer Orientation Program. These individuals attended six or more of the ten sessions and enrolled for the Fall, 1973 semester at The University of Arizona.

10. Grade-Point Average--". . . the unit value of each course is multiplied by the grade received . . . . The sum of these products is divided by the sum of the units . . ." (The University of Arizona, 1973, p. 3).

11. New Start Students--Disadvantaged individuals who volunteered to take part in the 1973 Summer Orientation Program at The University of Arizona and matriculated for the 1973-1974 academic year. The summer program included an English Composition course, the Study Skills Seminar, group discussions and general University orientation.

12. Predicted Grade-Point Average--High school grades and ACT scores combined to predict first semester grade-point average.

13. Study Skills--The ability to acquire knowledge from formally presented sources.

14. Study Skills Seminar--A five-week, ten-hour course offered for no credit, at no fee, under the auspices of the Student Counseling Service's Reading and Study Center. The program of instruction covered a range of topics including Principles of Learning, SQ4R, Scheduling of Time, Concentration and Remembering, Tools for Learning, Examinations, Library Usage, and Reading Rate Improvement.

To accommodate all students four classes were scheduled. The same syllabus and materials were used and the writer was the sole instructor for all sessions.

A summary outline and copy of the course syllabus are included in Appendix A.

CHAPTER II

RESUME OF THE RELATED LITERATURE

In this chapter literature pertinent to the study will be reviewed, beginning with literature on the feasibility and usefulness of predicting grade-point averages using ACT data and high school grades. The second section deals with the effectiveness of study skills instruction for improving academic performance. The last section considers those factors which contribute to the disadvantaged students' academic handicaps.

Literature on the Prediction of Grade-Point Averages

"Grade-point average . . . has importance as an indication of academic achievement" (Abe, 1970, p. 46). Many colleges and universities use ACT scores to predict first semester or first year grade-point averages for freshman students (Munday, 1967; Sassenrath and Pugh, 1965). To support this procedure, studies evaluating the predictive validity of the ACT scores have been undertaken (Bowers, 1967; Chase and Thompson, 1973; Munday, 1967, 1970; Loeb and Mueller, 1970; Pedrini and Pedrini, 1973; Spuck and Stout, 1969; Funches, 1965, 1967).

Funches (1965) studied the scores of freshmen at Jackson State College and found a correlation of .59 between

ACT composite scores and year-end grade-point averages. Hillway (1964) stated that ". . . a positive correlation of .30 or higher ordinarily may be sufficient evidence of a positive degree of relationship" (p. 225). Funches concluded that ACT composite scores are a reliable factor for predicting first year academic success. In a subsequent study Funches (1967) determined that the ACT composite score was a reliable predictor of first semester grade-point average, again at Jackson State College.

Sassenrath and Pugh (1965) found a correlation of .78 between first and second semester grade-point average, stating that ". . . grade-point average tends to be a highly stable measure for a population . . ." (p. 201).

Munday (1967), in his study "Predicting College Grades Using ACT Data," concluded that ACT scores and self-reported high school grades were valid when combined and used to predict grade-point averages. The combined ACT scores and high school grades, when used for the prediction, supplemented the validity of each score when it was used separately. This resulted in an increased reliability of the predicted grade-point average for a freshman group.

At the University of Illinois Loeb and Mueller (1970), using fifty-three hundred freshman scores, predicted first semester grade-point averages on the basis of combined ACT composite scores and high school percentile rank. They

concluded that both scores correlated with earned grade-point averages on an equal basis.

Using a sample of students from lower socioeconomic levels who were employed in a Federal Work-Study Program while attending Delta State College, Merritt (1972) found that the ACT composite score could be used to predict their academic performance for freshman year. He used the composite score to predict year-end grade-point averages and found a positive correlation at the .01 level of significance between the predicted and earned grade-point average.

There is some controversy surrounding the validity of using test data to predict grade-point averages, especially for disadvantaged students (Abe, 1970; Spuck and Stout, 1969). Abe (1970) contended that non-intellective data are better predictors of grade-point average while Spuck and Stout (1969) concluded that cognitive data are questionable when used to predict college success for disadvantaged students. Harrington (1969), in "Forecasting College Performance from Biographical Data," concluded that the ". . . use of biographical data as a selection device for admission purposes seems worthy of consideration. It can be used with the usual standardized test scores for predictive purposes in addition to providing useful information for counseling and guidance" (p. 157). He also found

that ACT scores and high school rank had the highest correlation with fall semester grade-point average.

In contrast to Harrington's conclusions, a 1968 report by Spencer and Stallings found ". . . non-intellective data added virtually nothing to ACT aptitude scores in predicting first semester grade-point averages" (p. 178). Crossland (1971), in a report for the Ford Foundation titled Minority Access to College, noted that despite attacks on standardized tests, no generally accepted alternative devices for selection have been developed.

Pedrini and Pedrini (1973) sum up the controversy by stating that high school grades and test scores yield variable success in the prediction of earned grade-point averages, but are a valuable tool for prediction when used with care.

Literature on Study Skills Instruction

There are many reports which discuss study skills instructional programs. In his analysis of the value of study skills improvement programs, Robinson (1961) concluded that ". . . a training program can show each student how to work to his full capacity" (p. vi). He also pointed out that methods of studying efficiently can be taught. Separate studies by Shaw (1955) and Ranson (1955) found that increased knowledge of study skills was a result of

instruction and this increased knowledge led to subsequent improved academic performance.

After reviewing twenty-two study skills courses, Entwisle (1960) stated that ". . . favorable results (in terms of academic performance) were noted in all cases when evaluations were undertaken . . ." (p. 249). Study skills improvement programs directed toward the disadvantaged student that have been evaluated tend to support the hypothesis that such intervention will increase the academic success of participants (Anthony, 1971; Rosella, 1970; Bednar and Weinberg, 1970; Licopoli, 1973). At Bucks County Community College Rosella (1970) determined that participation in a Reading-Study Skills program significantly increased grade-point average. In a more comprehensive evaluation of the Basic Skills Program at the same institution Licopoli (1973) concluded that ". . . study skills courses . . . were able to effect positive findings on the academic performance of students in the treatment group" (p. 12).

A rationale for offering such programs can be found in studies that deal with the academically disadvantaged. A 1967 IRCD Bulletin by Gordon titled "Higher Education and the Disadvantaged," contained a list of necessary special courses and services to be provided for these disadvantaged students in order to enable them to adjust and compete in college. One aspect of the proposed program was the

development of study skills. One objective of the College Bound Program in operation in New York City is the improvement of study skills. A 1973 report by the Connecticut Commission on Higher Education, "Special Needs of Minorities in Higher Education and Methods of Meeting Needs," recommended that services for minority students entering college ". . . would include . . . organized instruction to effective study methods . . ." (p. 17).

Several studies concerned with the necessary components of successful treatment programs for academically disadvantaged students note that study skills instruction is necessary. Rodriguez (1968) observed that Mexican-American students in higher education tend to have inadequate study habits and that intervention aimed at helping these students develop a program of study routine and consideration of planning to meet responsibilities will enhance these students' chances of achieving academic success.

Gomez and Vasquez (1969) outlined components for a summer institute to aid disadvantaged students, one of which was a Reading Center and Lab. Not only was the purpose of this facility to deal with reading and vocabulary problems but also to help develop skills for effective study, such as note-taking, the place of review, and differential approaches to academic subjects. Crossland (1971) also defined steps to lower the barriers for disadvantaged students in higher education. Pre-freshman summer

orientation programs and tutoring are means by which disadvantaged students can reduce their study problems.

Literature on the Disadvantaged Student

Numerous committee and individual reports, sponsored by public and private funds, have investigated the problems disadvantaged students encounter when they seek to gain admission to institutions of higher learning. It has been noted in several studies, particularly by Folger, Astin, and Bayer (1970), that the number of students completing high school has steadily increased since 1955 but that the disadvantaged segment of this high school graduate population do not seek entry into higher education on a proportional level with their non-disadvantaged peers.

In a 1972 study (Astin et al.) the findings in the literature were reviewed and categorized in three areas that affect disadvantaged status. These areas are socioeconomic status and home environment, the school system, and race. The problem encountered by all who attempt to deal with disadvantaged individuals in general has been well stated in this study, ". . . much of this literature is highly speculative because of inadequacies in both theory and data . . ." (p. 20).

A widely held assumption is that students who are culturally, financially, and socially disadvantaged are also academically disadvantaged. Prior school experience and

external reinforcement of the value of educational pursuits among the disadvantaged segment of our population enhance low self-esteem and lower levels of aspiration. These factors also handicap academic development (Astin et al., 1972). As an element of a special program for disadvantaged students, the Office of Economic Opportunity study recommended assistance in eliminating academic deficiencies and handicaps. Individuals must be taught prerequisite skills and behaviors necessary for academic success. The study concluded that with such assistance most high risk students do well academically.

A study for the Russell Sage Foundation (Folger et al., 1970) concurred with the OEO report's three categories, socioeconomic status, family influence, and race, but added a fourth factor, sex, which it considered equally important for determining disadvantaged status. The authors concluded, "Most of these students (with academic potential who do not go on to college) come from lower socioeconomic backgrounds and more of them are women than men" (p. 158).

Not only do disadvantaged individuals have lower rates of college entry but also lower rates of college completion. After describing the barriers to college entry and success, the Foundation study limited suggestions for improving the situation to generalizations, such as increased recruiting of disadvantaged students, "institutional

programs of assistance" (p. 311), and adequate financial aid.

More useful and directive suggestions have been made for enhancing the academic success of disadvantaged students. Hernandez (1969) listed handicaps to successful academic performance for disadvantaged students, one of which is poor preparation for the demands of college. Gomez and Vasquez (1969) suggested components for a summer program for disadvantaged students and Rodriguez (1968) advised that help developing an overall study routine would result in more successful academic performance.

In general, the literature indicated that more effective orientation toward college during high school and immediately prior to college entry with emphasis on academic and study skill development and enhanced self esteem and positive attitudes toward the value of higher education will minimize the handicaps with which disadvantaged students now enter higher education (Folger et al., 1970; Astin et al., 1972). Along with adequate recruiting and sufficient financial aid these students should no longer be high academic risks and our society will come closer to attaining the goals of equality in education.

Chapter II summarized the literature related to the prediction of grade-point average, study skills instruction, and the disadvantaged student. This review indicated that grade-point average can be predicted for the disadvantaged

student using ACT scores and high school grades. Study skills instructional programs have been found to be an important factor for improving academic performance as measured by grade-point average for students who participate in such programs. Several factors were isolated as characteristic of disadvantaged students, low socioeconomic status, sex (female), ethnic and racial background (minority), and poor academic preparation.

CHAPTER III

RESEARCH PROCEDURES

This chapter is concerned with the procedures followed by the writer in the collection and analysis of the data. Also included are the description of the population and the groups, and major findings.

Design

The population for this study was composed of one hundred and thirty-eight students matriculated at The University of Arizona during the fall semester, 1973-74. Of that number, one hundred and thirteen students were participants in the New Start Summer Orientation Program. This group was subdivided into two groups: an experimental ($n = 55$) and an A comparison ($n = 58$) group. This subdivision was based upon participation in the Study Skills Seminar that was part of the New Start Summer Program. All summer program participants were volunteers for New Start as were those students in the B comparison group. t tests were computed to determine the comparability of the groups prior to the hypotheses testing. This program also included an English Composition course, general university orientation, group discussions, tours of the university facilities and pre-registration for the fall semester,

1973-74. Those students in the experimental group attended six or more of the ten sessions of the study skills seminar, while students in the A comparison group attended five sessions or less. Those students in the B comparison group (n = 25) did not participate in any facet of the New Start Summer Orientation Program but were participants in the regular academic year program, which did not include any study skills instruction, offered by New Start. The members of the B comparison group were enrolled at The University of Arizona for the fall semester, 1973-74.

Method

Data were collected for all groups on the following: high school average and rank; ACT scores on English, Math, Social Sciences, Natural Sciences, and Composition; earned grade-point average for the fall semester, 1973-74; and Sex and Ethnic breakdowns. The data were made available by the Office of the Registrar, the Student Counseling Service, and the New Start Office of The University of Arizona.

In order to protect the identities of the individuals whose scores were used, the data were immediately entered on computer coding sheets under number codes (Experimental: 101-155; A Comparison: 201-258; B Comparison: 301-325).

Treatment of Data

Prior to entry on the computer coding sheets the predicted grade-point average for the fall semester was computed using high school average and the five ACT scores to attain the TH index established by ACT research. The data read into the CDC 6400 computer at The University of Arizona Computer Center consisted of individual high school rank (INDHSR), class total enrollment (CLASSTOT), ACT English (ACTE), ACT Math (ACTM), ACT Social Science (ACTSS), ACT Natural Science (ACTNS), ACT Composite (ACTC), Sex, Ethnic, EGPA, and PGPA.

An existing computer program, Statistical Package for the Social Sciences (SPSS) was used to describe the data for the population and the clusters. High school percentile rank was computed using INDHSR and CLASSTOT. The data were also processed to compare EGPA and PGPA by using a t test to determine the acceptance or rejection of Hypothesis 1. The computer was process coded to compute chi-square analysis of frequency tables to test for Hypotheses 2 and 3. Yates correction for continuity was automatically applied when the test was based on two degrees of freedom. The chi-square and t values available from the computer print out were compared against appropriate tables (Downie and Heath, 1965) at the .05 significance level at the appropriate degrees of freedom. Values equal to or greater than the values shown in the tables were sufficient to reject the

null hypothesis. If the values were less than those in the tables, the null hypothesis was upheld.

Analysis of the Data

This section has two subdivisions: a description of the population and the clusters and the major findings. Tables 1 through 8 do not relate directly to any of the hypotheses tested as described in Chapter I. The data described in Tables 1 through 8 serve only to define the population of this study and the subfiles. The remaining tables, 9 through 15 (major findings) relate to data collected and analyzed for Hypotheses 1 through 3, as stated in Chapter I.

It should be noted at this point that the statistical level chosen against which all the probabilities resulting from the following chi-square and t tests were measured was .05.

Description of the Population

As indicated in Table 1, there were more females than males in the population. This would be expected according to Folger et al.'s (1970) contention that females are a significant part of the disadvantaged population in our society.

Table 2 shows data describing the population in terms of ethnic breakdown. The high percentage of Mexican-Americans reflects the specific nature of the disadvantaged

Table 1. Sex breakdown for the New Start Population.

Sex	Number	Per Cent
Male	49	35.5
Female	89	64.5
Total	138	

Table 2. Ethnic breakdown for the New Start Population.

Ethnic Group	Number	Per Cent
1	39	28.3
2	19	13.8
3	16	11.5
4	60	43.5
5	4	02.9
Total	138	

1 = Anglo, 2 = Black, 3 = Indian, 4 = Mexican-American, 5 = Oriental.

group in the southwest, particularly the State of Arizona. The fact that 71.7% of this population are minorities with only 28.3% Anglo representation reflects the active recruiting for minority group members as well as their preponderance among the disadvantaged segment of our society.

The means, standard deviations, and ranges for the population on ACTE, M, SS, NS, C, EGPA, PGPA, and HSPR are shown in Table 3.

Table 3. Data description with means, standard deviations, and ranges for the New Start Population, N = 138.

Variable	$\bar{X}$	σ	Range
ACTE	14.91	5.20	5.00-27.00
ACTM	16,53	6.50	5.00-34.00
ACTSS	14.30	6.70	2.00-31.00
ACTNS	16.52	5.90	3.00-32.00
ACTS	15,75	5.25	6.00-29.00
PGPA	1.94	0.49	1.02- 3.13
EGPA	2.01	0.79	0.00- 3.79
HSPR	77.69	27.07	4.50-99.68

It is interesting to note the lack of significant difference between EGPA and PGPA ($t = 0.84$, $df = 136$) for the population as well as the difference in the range of each set of scores. The range of the EGPA was wider (0.00 to 3.79) than that of the PGPA (1.02 to 3.19). The ACT scores and the HSPR also cover a full range of scores and there is no restriction of the population due to limited range of scores on any of the variables considered in this study.

The term "disadvantaged" has been defined in this study to mean culturally, socially, financially, and therefore academically handicapped. One or more of these characteristics were essential for acceptance into the New Start Summer Orientation Program. The data indicate that the group of students comprising the 1973-74 New Start freshman population had more females than males and more individuals from minority racial and ethnic backgrounds than Anglos. These data support Astin et al. (1972) and Folger et al. (1970) in their conclusions that females and minority group members comprise the disadvantaged segment of our population.

The following tables, 4 through 8, describe each cluster of the population under study. Table 4 presents the number and per cent of males and females in each cluster.

Table 4 indicates that, with the exception of the B Comp group, the Exper and A Comp groups are close to the

Table 4. Sex breakdown for the New Start groups.

	Exper	A Comp	B Comp	Total
Male	15 (27.3)[a]	22 (37.9)	12 (48.0)	49 (35.5)
Female	40 (72.7)	36 (62.1)	13 (52.0)	89 (64.5)
Total	55	58	25	138

[a]The numbers in parentheses are the per cents.

ratio of males to females as seen in the New Start population. This corresponds to Folger et al.'s (1970) contention that females comprise a larger segment of the disadvantaged population than do males.

The ethnic breakdown of the three groups is shown in Table 5.

Table 5 indicates small percentages of Oriental and Indian representation and a complete absence of Orientals in the Experimental group, which also had a higher percentage of Anglos than the population. This can be accounted for by the fact that there was a larger percentage of females who were Anglos. The B Comp group had a smaller percentage of Mexican-Americans, a larger n for this sample could possibly increase this per cent to more closely approximate the population.

Table 5. Ethnic breakdown for New Start groups Exper, A Comp, and B Comp.

Group	Exper	A Comp	B Comp	Total
1	22 (40.0)	9 (15.5)	8 (32.0)	39 (28.3)
2	1 (1.8)	14 (24.1)	4 (16.0)	19 (13.8)
3	5 (9.1)	7 (12.1)	4 (16.0)	16 (11.5)
4	27 (49.1)	26 (44.8)	7 (28.0)	60 (43.5)
5	0 (0.0)	2 (3.4)	2 (8.0)	4 (2.9)
Total	55	58	25	138

1 = Anglo, 2 = Black, 3 = Indian, 4 = Mexican-American, 5 = Oriental.

In Tables 6 through 8, the means, standard deviations, and ranges of the data on the variables ACTE, M, SS, NS, C, EGPA, PGPA, and HSPR are shown. These raw data were used, as shown in Tables 9 and 10, to compute t tests for group comparisons on the variables.

Table 6 refers to the experimental group, Table 7 to the A Comparison group, and Table 8 to the B Comparison group. The B Comp group has, in general, a slightly restricted range of scores on the ACT data, EGPA, and PGPA.

Table 6. Data description with means, standard deviations, and ranges for the Exper group, n = 55.

Variable	$\bar{X}$	σ	Range
ACTE	14.71	5.11	7.00-27.00
ACTM	15.49	6.77	5.00-34.00
ACTSS	13.71	6.75	2.00-26.00
ACTNS	16.24	5.96	3.00-32.00
ACTC	15.18	5.45	6.00-29.00
EGPA	2.19	0.72	0.34- 3.50
PGPA	1.87	0.49	1.02- 3.08
HSPR	75.40	31.01	19.46-99.64

Table 7. Data description with means, standard deviations, and ranges for the A Comp group, n = 58.

Variable	$\bar{X}$	σ	Range
ACTE	13.76	4.62	5.00-26.00
ACTM	15.55	6.13	5.00-33.00
ACTSS	12.38	5.20	3.00-27.00
ACTNS	14.98	5.44	3.00-31.00
ACTC	14.47	4.45	6.00-29.00
EGPA	1.82	0.84	0.00- 3.79
PGPA	1.85	0.42	1.15- 3.19
HSPR	79.26	22.65	4.50-99.18

Table 8. Data description with means, standard deviations, and ranges for the B Comp group, n = 25.

Variable	$\bar{X}$	σ	Range
ACTE	18.04	5.62	7.00-25.00
ACTM	21.08	4.67	15.00-29.00
ACTSS	20.00	6.78	3.00-31.00
ACTNS	20.72	4.91	9.00-30.00
ACTC	20.00	4.48	10.00-29.00
EGPA	2.08	0.75	0.90- 3.27
PGPA	2.33	0.75	1.55- 3.02
HSPR	79.09	27.92	13.33-99.68

A larger n for this group might have eliminated this slight restriction of the sample.

Major Findings

To define any significant differences between the experimental group and each of the two comparison groups on earned and predicted grade-point average, t tests were computed. Table 9 shows the data for the experimental and the A comparison group.

Table 9 indicates no significant differences between the groups on the following variables: ACTE, M, SS, NS, and C, PGPA, and HSPR. There was a significant difference at the .05 level between the EGPA's for the two groups. The experimental group had a significantly higher EGPA than the A comparison group. These data indicate that the variable for which there was a significant difference between the Experimental and A Comparison groups, EGPA, was that variable which could be influenced by the study skills instruction and in a positive direction where the EGPA is higher than predicted.

Table 10 shows the data on the significant variables for the experimental and B comparison groups.

In Table 10 an almost complete reversal of the findings in Table 9 is shown. Where the experimental and A comparison groups were similar the experimental and B comparison groups differ. There are significant differences

Table 9. Summary on variables for the Exper and A Comp groups using t test.

Variable	$\bar{X}$	σ	t
ACTE			
Exper	14.71	5.11	1.04
A Comp	13.76	4.62	
ACTM			
Exper	15.49	6.77	-0.05
A Comp	15.55	6.13	
ACTSS			
Exper	13.71	6.75	1.18
A Comp	12.38	5.20	
ACTNS			
Exper	16.24	5.96	1.17
A Comp	14.98	5.44	
ACTC			
Exper	15.18	5.45	0.73
A Comp	14.47	0.84	
EGPA			
Exper	2.19	0.72	2.55*
A Comp	1.82	0.84	
PGPA			
Exper	1.87	0.49	0.22
A Comp	1.85	0.42	
HSPR			
Exper	75.40	31.01	-0.76
A Comp	79.26	22.65	

*Significant at the 0.05 level.

d.f. = 54; 0.05 level of significance = 1.960; Exper n = 55; A Comp n = 58.

Table 10. Summary on variables for the Exper and B Comp groups using t test.

Variable	$\bar{X}$	σ	t
ACTE			
Exper	14.71	5.11	2.18*
B Comp	18.04	5.62	
ACTM			
Exper	15.49	6.77	3.31*
B Comp	21.08	4.67	
ACTSS			
Exper	14.71	6.75	2.70*
B Comp	20.00	6.78	
ACTNS			
Exper	16.24	5.96	2.80*
B Comp	20.72	4.91	
ACTC			
Exper	15.18	5.45	3.36*
B Comp	20.00	4.48	
EGPA			
Exper	2.19	0.72	0.90
B Comp	2.08	0.75	
PGPA			
Exper	1.87	0.49	3.50*
B Comp	2.33	0.46	
HSPR			
Exper	75.40	31.01	0.43
B Comp	79.09	27.92	

*Significant at the 0.05 level.

d.f. = 24; 0.05 level of significance = 2.064; Exper n = 55; B Comp n = 58.

between the scores on the ACT variables and PGPA, where the B comparison group had significantly higher scores. There were no significant differences between scores on HSPR and EGPA for the experimental and B comparison groups.

The data in Tables 9 and 10 indicate significant differences between the experimental and B comparison groups on ACT scores and PGPA. The only significant differences between the experimental and A comparison groups was on EGPA.

Table 1 through 10 define the population and the subgroups of that population analyzed in this study. The ethnic and sex breakdown differences can be accounted for by a small n for the B comparison group and the large number of females in the experimental group. The statistical difference among the groups on the score variables were significant in several instances, notably the EGPA for the experimental and A comparison groups and the ACT scores and PGPA for the experimental and B comparison groups. The data that differentiate the latter two groups would indicate that similar statistical differences would exist between the EGPA scores. Since this difference was not proved, this writer assumes that the experimental and B comparison groups were similar for the purposes of this study, which was to determine differences in the actual academic performance of the three groups at the 0.05 level of significance.

Tables 11 through 13 show the data collected and analyzed relative to Hypothesis 1, which states: "There will be no significant differences in the predicted grade-point averages and the earned grade-point averages for the first semester of the 1973-1974 academic year for the experimental group and the two comparison groups."

Table 11 indicates that there was a significant difference between the EGPA and the PGPA for the experimental group. The experimental group had a significantly higher EGPA than could be predicted.

Table 11. Analysis of earned and predicted grade-point averages for the Exper group using t test, n = 55.

	$\bar{X}$	σ	t
EGPA	2.19	0.72	2.30*
PGPA	1.87	0.49	

*Significant at the 0.05 level.

d.f. = 54; 0.05 level of significance = 1.960.

Table 12 shows the results of the t test for the A comparison group and there was no significant difference between the EGPA and the PGPA. The difference between the means was 0.03 with the PGPA slightly higher than the EGPA.

Table 12. Analysis of earned and predicted grade-point averages for the A Comp group using t test, n = 58.

	$\bar{X}$	σ	t
EGPA	1.82	0.84	-0.25
PGPA	1.85	0.42	

d.f. = 57; 0.05 level of significance = 1.960.

As indicated in Table 13, there is also no significant difference between the EGPA and the PGPA for the B comparison group at the 0.05 level even though the difference between the means is 0.25. The PGPA was 0.25 points higher than the EGPA.

Table 13. Analysis of earned and predicted grade-point averages for the B Comp group using t test, n = 25.

	$\bar{X}$	σ	t
EGPA	2.08	0.75	-1.46
PGPA	2.33	0.46	

d.f. = 24; 0.05 level of significance = 2.064.

On the basis of the data presented in Tables 11 through 13, the null Hypothesis 1 is rejected by the writer since there was a statistically significant difference between the EGPA and the PGPA for the experimental group. These data indicate that the experimental group significantly increased GPA over what had been predicted. On the basis of a comparison of the experimental group and the A comparison group, which was not significantly different from the experimental group except that the A comparison group did not experience the full range of study skills instruction, the writer concludes that the instruction had a positive effect on the experimental group's GPA.

Table 14 relates to the second hypothesis, which states: "There will be no significant difference in the number of students from the experimental and comparison groups on the mid-fall semester D-list."

As indicated in Table 14, there was no significant difference in the numbers of students from the three groups on the mid-fall semester D-list. This result leads to the decision to uphold the null hypothesis. A study of these New Start students over a longer time period may show significant differences in the number of students from each group who are on the mid-semester D-list.

Data collected relative to Hypothesis 3 are shown in Table 15. Hypothesis 3 states: "There will be no significant difference in the number of students from the

Table 14. Comparison by chi-square of the number of students on the D-list for the Exper, A Comp, and B Comp groups.

D-list	Yes	No	Total
Exper	29 (30.0)	26 (25.1)	55
A Comp	31 (31.5)	27 (26.5)	58
B Comp	15 (13.6)	10 (11.4)	25
Total	75	63	138

$\chi^2 = 0.7173$; d.f. = 2; P = 5.991.

Table 15. Comparison by chi-square of the number of students who withdrew from the university for the Exper, A Comp, and B Comp groups.

Withdrew	Yes	No	Total
Exper	1 (1.6)	54 (53.4)	55
A Comp	2 (1.7)	56 (56.3)	58
B Comp	1 (0.7)	24 (24.3)	25
Total	4	134	138

$\chi^2 = 0.8801$; d.f. = 2; P = 5.991.

experimental and comparison groups who did not register for the spring semester of the 1973-1974 academic year."

There was no significant difference in the numbers of students from each group who dropped out of the university therefore the null hypothesis is upheld. As with Hypothesis 2, an analysis of data for Hypothesis 3 over a longer time period may well show significant differences in the number of students from each group who eventually drop out of the University.

In conclusion, no significant differences among the three groups were found upon investigating the following: number of students on the D-list at the mid-fall semester and the number of students who failed to register for the spring semester, 1973-74.

There was a statistically significant difference between the EGPA and the PGPA for the experimental group while no such differences were discovered for the two comparison groups, although the EGPA was observably different for these two comparison groups in a negative direction when compared with the PGPA.

CHAPTER IV

CONCLUSIONS, IMPLICATIONS, AND RECOMMENDATIONS

This study was concerned with comparing earned grade-point averages (EGPA) with predicted grade-point averages (PGPA) for three groups of disadvantaged students. Two groups, experimental (EXPER) and A Comparison (A Comp), had differential participation in the Study Skills Seminar offered as part of the New Start Summer 1973 Orientation Program. The B Comparison (B Comp) had no contact with the summer program.

Conclusions

On the basis of the rejection of the null Hypothesis 1 referring to significant differences between EGPA and PGPA for the three groups under consideration in this study, the writer draws the following conclusions.

The lack of significant differences on all variables under consideration except EGPA for the Experimental and the A Comparison groups indicates a comparability. The major difference between these clusters as defined in this study was differential participation in the study skills seminar. The experimental group was exposed to more instruction than the A comparison group. Since study skills instruction has been shown to improve EGPA (Entwisle, 1960; Anthony, 1971;

Rosella, 1970; Licopoli, 1973; Bednar and Weinberg, 1970), the writer concludes that the differences between EGPA and PGPA for the experimental group is a direct result of the study skills instruction program offered by the New Start Summer Orientation Program. It is interesting to note that, though there were significant differences on ACT scores and PGPA for the experimental and B comparison groups (with the latter having the significantly higher scores), there was no statistically significant difference between the EGPA for these groups.

The fact that Hypotheses 2 and 3 were upheld could indicate that a finer analysis of the D-list category, separating those subjects who were actually failing as opposed to those who were achieving a grade of "D," might have yielded significant results. With Hypothesis 3 an evaluation of the reasons given for withdrawing from the university also might have changed the statistically insignificant results.

The major finding that there was a significant difference toward higher EGPA's for the experimental group indicates that some type of orientation program, including Study Skills instruction, will assist students in maintaining academic achievement at predicted levels if such programs do not in fact increase academic performance. The fact that the group that had no contact with the orientation program had observably, if not statistically significant,

lower EGPA's than could be predicted is supportive evidence for the maintenance and upgrading of summer orientation programs, especially for students who are disadvantaged.

Implications

With declining student enrollments and related financial problems a reality for many colleges and universities, it is advantageous for such institutions to retain those students already enrolled as well as recruiting and preparing new students. The Study Skills Seminar, offered as part of the New Start summer program, described in this study improved the academic performance of those students who completed the course. Other studies (Shaw, 1955; Ranson, 1955; Entwisle, 1960; Rosella, 1970; Licopoli, 1973), which deal with students already enrolled at institutions of higher learning, who are facing academic failure, show similar results--significantly improved academic performance. The rationale offered for improving academic performance is this, Students who are academically successful remain in school in higher proportions than those students who are unsuccessful. If Student Personnel Services at all institutions of higher learning offered study skills instruction, free tutoring, and counseling, drop out rates could decline as students became academically successful.

Another implication deals with general orientation programs. The group that experienced such a program (A Comp) at The University of Arizona did as well as predicted while the non-participant group (B Comp) had lower EGPA's overall. Mandatory attendance at some type of orientation program for all students could be advantageous to institutions and students alike.

Such offerings as mandatory orientation programs and study skills instruction will require increased staffing with well-trained student personnel workers. These increased efforts and costs for program expansion, or implementation where they do not exist at all, will result in a higher proportion of the student population who are academically successful and who therefore will tend to complete their courses of study and experience less difficulty in the process.

Recommendations for Further Research

In any subsequent studies of disadvantaged students, information on parental and cultural attitudes toward higher education as well as analysis of the motivational levels of the participants, the academic quality of the high schools attended, and aspirational levels of the participants would be useful in determining more specifically the differences among the samples of the population.

Another area of future study would allow for the random assignment of students to the study skills seminar and a control group. A matched non-disadvantaged control could also be randomly selected. The disadvantage of this procedure at The University of Arizona is twofold at present. The seminar is non-credit and the dropout rate can be expected to be high. A unit of credit to be averaged with the cumulative GPA but not counted toward graduation would serve as an incentive. The second disadvantage is more crucial; the control group of disadvantaged students would not have the proven assistance that some type of study skills help would provide to enable them to be academically more successful. This study has shown that such assistance is a means to the end of removing some of the handicaps that disadvantaged students bring with them to college.

APPENDIX A

STUDY SKILLS SEMINAR

Study Skills Schedule

Section 1--M-W (two Fridays); 11:00-11:50; Room 206 Liberal Arts

Section 2--M-W (two Fridays); 12:30-1:20; Room 314 Old Psych

Section 3--T-Th; 11:00-11:50; Room 205 Liberal Arts

Section 4--T-Th; 12:30-1:20; Room 314 Old Psych

Dates for sections 1-2	Dates for sections 3-4	Topics
W 6/20	T 6/19	SSHA
F 6/22	Th 6/21	Principles of Learning
M 6/25	T 6/26	S Q 4 R
W 6/27	Th 6/28	Scheduling Time
M 7/2	T 7/3	Concentration and Remembering
F 7/6	Th 7/5	Tools for Learning
M 7/9	T 7/10	Examinations
W 7/11	Th 7/12	Library Usage
M 7/16	T 7/17	SSHA
W 7/18	Th 7/19	Evaluation

SSHA--Brown-Holtzman Survey of Study Habits and Attitudes

(Brown and Holtzman, 1965)

Principles of Learning

Will to Learn
Active Involvement
Action
Organization

Understanding
Review

(Air University, Maxwell A.F.B., 1964)

S Q 4 R

Survey
Question
Read
Recite
"Rite"
Review

(Smith et al., 1961)

Scheduling Time

Schedule — Semester
Week
for — Preparation
Review

(Brown and Holtzman, 1972; Ehrlich, 1961; Norman and Norman, 1971; Pauk, 1962; Robinson, 1961)

Concentration and Remembering

Relaxation exercises
Eliminate distractions
Solve problems

(Brown and Holtzman, 1972; Norman and Norman, 1971; Pauk, 1962; Robinson, 1961; Stanton, 1958)

Tools for Learning

Notetaking--Lectures
Reading Material
Classroom behavior
Teacher expectations
Places to study

(Brown and Holtzman, 1972; Ehrlich, 1961; Norman and Norman, 1971; Pauk, 1962; Robinson, 1961)

Examinations

(a) Preparing for them
  Know material--known and unknown
  Know instructor--type of test
(b) Taking them
  Essay
    Plan attack and time use
    Write on all questions
  Objective
    Time self
    No blanks
    Don't change answers

(Brown and Holtzman, 1972; Ehrlich, 1961; Norman and Norman, 1971; Pauk, 1962; Robinson, 1961; Stanton, 1958)

Library Usage

Branches
Catalog use
Reference materials
Reserve books
Recall books
Fines

(Ehrlich, 1961; Norman and Norman, 1971)

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