A Study-Support Program for High-Risk, Black College Freshman Enrolled in a General Psychology Course

Angela Michelle Williams
Western Michigan University

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A STUDY-SUPPORT PROGRAM FOR HIGH-RISK, BLACK COLLEGE FRESHMEN ENROLLED IN A GENERAL PSYCHOLOGY COURSE

by

Angela Michelle Williams

A Thesis
Submitted to the
Faculty of The Graduate College
in partial fulfillment of the
requirements for the
Degree of the Master of Arts
Department of Psychology

Western Michigan University
Kalamazoo, Michigan
April 1987
A STUDY-SUPPORT PROGRAM FOR HIGH-RISK, BLACK COLLEGE FRESHMEN
ENROLLED IN A GENERAL PSYCHOLOGY COURSE

Angela Michelle Williams, M.A.
Western Michigan University, 1987

As a replication of Jackson's (1984) work, this research compared the performance of three groups of college freshmen. The groups consisted of black, high-risk students who voluntarily enrolled in a study-support group because of their initial quiz scores. The support program required the students to study each week's psychology objectives in four smaller segments, rather than studying all the week's material at once. The assumption was that this would increase the students' contact with the study material and improve their performances. An ABA design was used. The participants in the support program received higher quiz scores and final grades than the students who chose not to participate, but this may have been the result of confounded variables. There was no difference between the study-support and the control group without the opportunity to volunteer.
ACKNOWLEDGEMENTS

I would like to thank God for giving me the strength to let go and to let God. I would like to thank Mr. C.O. and Mrs. Bettie Williams, Dexter Williams, and Rodson Campbell for all of their support, love, and continuous encouragement. A most gracious appreciation is extended to Dr. Richard W. Malott and Mr. Mark A. Jackson for their endless hours of guidance, assistance, sharing, and caring. You two will always be an inspiration to me. Finally, I would like to thank all of the students who participated in my research, for it would not have been possible without you.

Angela Michelle Williams
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CHAPTER I

INTRODUCTION

Researchers have specified many factors that decrease the likelihood of success in institutions of higher education. Proposed causes for low success range from insufficient time allocated to study preparation (Dean, Malott, & Fulton, 1983; Jager, 1984; Raaheim, 1984) to socio-psychological factors such as alienation (Suen, 1983).

Success in this context means that the student completes the requirements for the degree while maintaining a grade-point average (GPA) of at least 2.0. Success also means the completion of these requirements within five years.

The present study was developed to compensate for a specific behavioral deficit that some students have. Many students fail to contact the relevant study material at all or in enough time to properly prepare for an exam. It is noted in previous studies that when self-management techniques were implemented, an increase in academic performance was noticed. The study-support program was implemented in order to evaluate its effectiveness in increasing the academic performance of high-risk, black college students in particular and high-risk students in general. The program was initiated to increase the likelihood that the students would achieve a G.P.A. of 2.0 or above in a general psychology course. This would, therefore, increase the likelihood that the students would remain in
good academic standing with the university by achieving an overall grade-point average of 2.0.

As indicated earlier, researchers have begun to study the variables which lead to high attrition rates, such as not enough time allocated for study preparation and the alienation mentioned above. Researchers have begun to develop programs that will lead to increased retention of black students in particular and all students in general for periods long enough to graduate five years after beginning college. But Gosman, Dandridge, Nettles, and Thoeny (1983) questioned whether retention programs and counseling programs designed especially for black students would increase the likelihood of retention and the following of progression patterns; that is, advancement to sophomore level in the second year, junior level in the third year, etc. Gosman et al., (1983) suggested that more universities should engage in active research on the variables related to retention. They collected information from several types of higher education institutions (large, predominantly white institutions, black public universities, and private universities). They collected drop-out percentages, graduation percentages within four or five years and overall progression rates of black and white students entering universities from 1975 to 1981. Through their research, the authors found it unlikely that race alone was a predictor of low performance and poor progression rates. Family income and low SAT scores were better predictors of attrition and poor progression rates. The authors suggested that specialized retention programs should,
therefore, be designed around the specific deficiencies each institution finds to be directly related to the performance of its students. The authors stated that low SAT scores may be better predictors than race of low performance demonstrated by students enrolled in universities. However, researchers must be careful not to expect that developing programs that will increase the students' SAT scores will necessarily increase their academic performance.

Low academic performance by black students in particular and students in general has been a problem on college campuses for some time. Because of this, several systems have been designed and implemented to increase students' academic performance. Green (1982) studied procrastination in six black college freshmen enrolled in a reading improvement class. Procrastination was defined generally as a failure to initiate or complete a task or activity by a predetermined time (Ellis & Knaus, 1977). Each of the students in Green's study was admitted to college through a special admission program for economically and academically disadvantaged black students. He hypothesized that self-monitoring plus self-reward would increase academic behaviors and decrease related procrastination better than self-monitoring alone. He studied academic behaviors in comparison to procrastination. The academic measures were the following: Number of days of class attended on time; percentage of assignments completed on time; and the number of minutes spent studying. The measures for procrastination were number of minutes late, days tasks postponed, and days studying postponed. For all of the academic behaviors,
performance increased. For each of the measures of procrastination, performance decreased. The results yielded statistical significance at the .01 level, which indicate that self-monitoring plus self-reward produced significantly higher grades than self-monitoring alone. Class quiz scores increased from 24% in baseline, to 31% in self-monitoring alone; but when self-reward was added to the treatment, class quiz percentages increased to approximately 76%. However, there were no control data, such as those which could be obtained during reversal, to rule out the possibility that the students' improvement was due to confounding variables rather than the treatment, self-monitoring plus self-reward.

Kelley and Stokes (1982) evaluated the effects of a performance contracting procedure that students and teachers used to increase academic productivity. The participants were 13 high school drop-outs, ranging in age from 16 to 21 years, enrolled in a vocational/educational training program for disadvantaged youth. Kelley and Stokes concluded that contracting for academic productivity and rewards increases the academic performance of students. They believed that measurable behavior or response products such as increased scores on reading tests followed by contingent delivery of praise was effective in increasing academic performance. They stated that attempts to increase nonmeasurable behaviors of students (such as attention) were not very effective for improving their academic performance. During baseline, the students were paid $2.35 for each hour they attended school. During contracting conditions, students were paid contingent
on contract fulfillment of academic productivity goals set by mutual agreement between the students and the teachers. The students averaged 20 items correct in various academic courses such as mathematics and English during baseline. During contracting procedures, the average increased to 65 items correct.

Hudesman, Avramides, and Loveday (1983) utilized academic contracting and semi-structured counseling interviews which focused on academic as well as nonacademic concerns. They hypothesized that students within the counseling framework that included an academic agreement and periodic individual meetings would have higher GPA's than those students who were offered the same services in a less structured environment. The participants were 48 community college students (85% minorities) with GPA's less than 2.0 for at least two semesters. The students met with counselors a minimum of three times within the academic semester. During that time, students and counselors reviewed all tests, lab reports, and homework assignments. The tests and lab reports were used to aid the counselor in evaluating such variables as the students' level of performance and study skills. The results showed an increase in the GPA's of the experimental group following the review session while the control group without the counselor attention GPA's remained the same. However, several variables may have confounded the results of this study. The students volunteered to participate and this alone may be responsible for the differences between the two groups. Also, on the basis of work in the Center of Self-Management with similar students, Yancey (1983) and
Jager (1984) noted the importance of strict, specific point contingencies on grades and weekly meetings in improving and maintaining satisfactory academic performance. Therefore, considering that contracting only occurred three times a semester, statistical significance is unlikely. The authors did not state whether improvement was strong enough to warrant counseling sessions.

Fifty percent of all institutions of higher education and 75% of all four-year public universities have established learning centers that offer services for improving reading efficiency, writing ability, and study skills (Sullivan, 1979). Berhman, Dark, and Paul (1984) suggested that only limited changes are brought about by many learning skills interventions. They suggested this was because of the following:

1. The selection of these programs has not been based on findings of empirical investigation.

2. Long-term effects of these programs on students' academic performance have not been adequately examined and documented.

3. There has been little study of the effect of separate features of the study-skills package or their possible interactions, and existing research has mixed results.

The authors, therefore, studied the effects of a structured learning-skills intervention on long-term academic performance. The participants were 75 entering freshmen who voluntarily enrolled in and subsequently completed a learning-skills course during the fall of 1979. They matched a control group of 75 freshmen according to high
school GPA's and ACT's. Data were collected for three years on the 150 students. At the end of the first year, the learning skills group had a higher GPA than the control group. Following the end of three years, the learning skills group had a higher number of students retained at college, but the average GPA was higher in the control group. The authors indicated no statistical significance. Furthermore, there were some flaws. The main flaw was that the subjects were not randomly assigned. Even though they were matched by GPA's and ACT's, they may not have been matched to more crucial variables for the tendency to do what it takes to succeed. One group of high-risk students did not volunteer to participate in the academic skills program though evidence would suggest that they needed it. Therefore, the students in that group might be less likely to do what it takes to succeed in college. This variable alone might account for the difference between the two groups rather than the effects of the academic skills program itself.

To find a learning-skills intervention that is successful in increasing the academic performance of students, many researchers have chosen to implement several components simultaneously. Once the set of components has been proven to be successful, further research can eliminate certain components from the set to find the most effective single component for improving academic performances. For example, Jackson (1984) implemented a supplemental study-support system for black students interested in improving their weekly quiz scores in general psychology. The program was designed to assist high-risk
black students who were admitted to the university on academic probation because of poor high school achievement in college preparatory courses. The students were admitted to the university through a special program called the Martin Luther King Program (MLK). The control group in Jackson's study consisted of both MLK and other black students who had not entered the university on academic probation. Jackson utilized many variables such as behavior contracting, flashcards, peer tutoring, and team competitions to improve the grades the students would achieve in general psychology. The results of his study indicated a statistically significant superiority in weekly quiz scores of the study-support group over the "traditional" group enrolled in general psychology. Seventy-two percent of the students in the study-support group obtained a final grade of B or higher compared to 41% of the students not enrolled in the study-support group.

There was a methodological weakness in the study in that students were not assigned randomly but entered the study-support group by self-selection. That is, highly motivated students could have joined the support group, thus accounting possibly for extraneous variables indicating successful results.

Although a number of researchers have addressed the problems of academic deficiency, few if any successful programs have been conclusively demonstrated at the college level. The academic deficiencies among students is a concern at Western Michigan University, but the attrition rate continues to remain high (see Table 1).

The dismissal data for the various groups of freshmen are presented to show the magnitude of the attrition problem on W.M.U.'s
A large percentage of students in the Martin Luther King Program are placed on academic probation (AP) and continued probation (CP) following winter semester.

Table 1

<table>
<thead>
<tr>
<th>Year</th>
<th>Winter Admissions</th>
<th>Regular Admissions</th>
<th>MLK Freshmen</th>
<th>MLK Freshmen on</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Black N %</td>
<td>White N %</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1982</td>
<td>21/89 24</td>
<td>460/1,917 24</td>
<td>24/98 24</td>
<td>34 35</td>
</tr>
<tr>
<td>1983</td>
<td>38/105 36</td>
<td>460/2,008 23</td>
<td>21/106 20</td>
<td>21 20</td>
</tr>
<tr>
<td>1984</td>
<td>40/148 27</td>
<td>511/2,036 25</td>
<td>26/112 23</td>
<td>14 13</td>
</tr>
<tr>
<td>1985</td>
<td>59/161 37</td>
<td>615/2,126 29</td>
<td>29/122 24</td>
<td>26 21</td>
</tr>
</tbody>
</table>

J.E. Asher (Personal Communication, August 13, 1986)

These students have failed to reach the required minimum GPA of 2.0. These data were shown to better present the true percentage of students with academic deficiencies in the Martin Luther King program. If the percentages are added together, it shows that over half of the students admitted to the university through the summer program (MLK) continue to have little chance of success in college following winter semester.

The techniques of the present study were based on the earlier study by Jackson (1984). The present study differs from Jackson's in
several ways. The first change was changing the assignment of students in the support group and the control group. Although in both studies, the students volunteered to participate in the support group, Jackson used both MLK and nonMLK students in his support and control group, whereas the present study used only MLK students in the support group along with two separate control groups—one of MLK and one of nonMLK students. The number of staff used in Jackson's (1984) study was nine. There were only six staff members in the present study. In both studies, the students were responsible for reciting 100% of their flashcards correctly to receive all of their points that day in Psychology 397. The experimenter in the present study added an extra requirement that students should state all of the flashcards in a predetermined amount of time to receive all of their points for that day. Also, an additional incentive system was used. This incentive system enabled students who had satisfied the requirements of the course (reciting 100% of their flashcards correctly and in time, the first out of two chances) to leave the class (Psychology 397) early. Finally, the present study added a third phase (return to baseline) to better evaluate the effectiveness of the procedure. The Jackson study (1984) only had baseline and support-group phases.
CHAPTER II

METHOD

Subjects

Study-Support Group

The subjects were 18 black freshmen in the MLK program enrolled in Psychology 397. In the Winter semester of 1986, a study-support course offered for one credit-hour. This course was taken in conjunction with a special section of a three-credit-hour general psychology course, a section offered to black students. The students volunteered to take this particular section, and they were informed that a one-credit-hour course was a support-section designed to assist them in obtaining a higher grade in general psychology.

Eight males and 10 females were enrolled in the study-support course. They ranged in age from 18 to 19 years. Each of the students was admitted to the university on academic probation through the Martin Luther King Program (MLK). As indicated earlier, MLK students enter the university with less than a 2.0 average in their college preparatory classes and ACT composite scores averaging 11.

Control Groups

The first control group consisted of seven students enrolled in the same section of general psychology as the experimental group.
These students belonged to the Martin Luther King Program and, therefore, had GPA's comparable to the support group. They were not matched to the support group according to their baseline quiz scores; the experimenter simply monitored their weekly quiz performances throughout the semester. The students in this control group were not participants in the study-support course. The age range of these students was comparable to the experimental group (17-19 years). The students in this control group heard the same lecture and received the same material as the experimental group.

The second control group consisted of 18 white students in different sections of general psychology. They did not participate in the study-support course. This control group had baseline quiz scores comparable to the experimental group. There were no black students in the other sections that met the performance criteria to be a part of nonMLK control group. None of the 18 students in the control group belonged to the Martin Luther King Program, nor were they admitted on academic probation. The age range of these students was comparable to the experimental group (17-19 years). The students in this control group received the same materials and heard similar lectures from other instructors of general psychology. The instructors had a meeting prior to their lectures to make sure that the definitions given in the lectures were the same in each section and that specified material was covered in class for the upcoming quiz.

Setting

The study was conducted at Western Michigan University, Kalamazoo, Michigan. The students in the support group met in a
classroom divided into four sections when the students pulled their chairs together to form a circle in each corner of this classroom. There were two groups of five and two groups of four students paired off with one teaching assistant for each group. At the front of the classroom was a table with four chairs, a course assistant, and a feedback coordinator who sat in front of the room to monitor the time, and to observe the teaching assistants' performance.

**Staff Members**

There were six staff members of the study-support course. Four teaching assistants (TA's) were responsible for assessing the students' conceptual master of course material and for recording and posting the students' daily performance. Each of the six black, undergraduate staff members was exemplar in both the general psychology course as well as the study-support course during a previous semester. Two of the staff members were enrolled in general psychology and study-support the previous year, while the remaining four had been participants the previous semester. Each of the staff members belonged to the Martin Luther King Program. The course assistant (CA) monitored the performance of the TA's. The feedback coordinator recorded and posted data on the TA's' performance levels. The contracting supervisor was in charge of coordinating the students' contracts. Each of the staff members received three hours of course credit for the performance of their duties. They all received a grade on a percentage basis with (A = 95% - 100% of task completed, BA = 90% - 94%, etc.).
Dependent Variables

The students were asked to give a self-report of how many hours per week they spent studying for general psychology before and after study-support began. The experimenter wanted to evaluate whether there was a relationship between increased studying and improved grades on the weekly quizzes.

The experimenter measured the number of items correct on quizzes in general psychology so comparison of weekly quiz scores before and after treatment could take place. The weekly percentage of correct items earned by each student after oral recitation of flashcards in the support course was compared with the percentage of correct items on the weekly quizzes given in general psychology. Finally, the experimenter compared the final course grades of the three groups.

Procedure

The investigation consisted of three phases, each of which took place across several weeks. In each phase, the experimental measured the weekly exam scores.

During phase one (baseline), the students were responsible for attending general psychology lectures twice per week and for taking weekly quizzes every third class meeting. The study-support course did not meet during this time.

After the first four quizzes, the study-support condition began. This condition consisted of the implementation of the one-credit-hour study-support course. During this condition, the students had several
requirements to complete and received points toward their final grade in the study-support course based on their performance of the following tasks.

**Study-Support Course Attendance (Phase II)**

The students were required to attend two 50-minute sessions per week. These sessions were held on Tuesday and Thursday from 11:00 to 11:50 a.m. During the beginning of the semester, the experimental group was divided into four groups, and each group was assigned a teaching assistant. For the first five minutes of the session the students reviewed their flashcards (index cards with the general psychology quiz questions and answers on them). Then, they took turns reciting to a teaching assistant the answers to the assigned objectives within a predetermined amount of time (approximately eight to 12 objectives from the weekly objective sheet recited in two minutes). Following the oral quiz, any student who recited all of the objectives correctly within the time limit was able to leave class; all other students were required to remain and review the objectives with the teaching assistant before reciting the objectives for a second time.

**Flashcard Completion**

Students were required to submit a specified number (eight to 12) of flashcards (answered objectives on index cards) to the instructor following each lecture on Monday. The teaching assistants checked the cards for incorrect or incomplete answers. The correct answers were placed on the cards with the incorrect answers, and the cards were
returned to the students during the next study-support course. If the student submitted blank flashcards (unanswered objectives), points were deducted from the student and no corrections were made. However, the TA made it a point to discuss these objectives in class the next day.

Inter-observer agreement checks were conducted by the experimenter on teaching assistants' accuracy in correcting flashcards. The teaching assistants for self-management were responsible for checking incorrect answers on the students' flashcards and writing the correct answers on the card. This was done to insure that the students studied the correct answers. Following the TA's duties, the experimenter collected the cards and checked for the TA's accuracy. The TA's were unaware of the inter-observer reliability checks.

The method of computing agreement percentages was as follows:
\[
\frac{\text{Agreement}}{\text{Agreement} + \text{Disagreement}} \times 100
\]

Staff Duties

Behavioral Contract Form

Staff members were responsible for filling out behavioral contract forms when a students' performance fell below 70% on weekly quizzes or during the in-class oral quizzes. These forms specified the time a student and a staff member would meet to review the current objectives for the upcoming quiz or the following week's objectives for the next quiz. The forms also specified the number of objectives the student was to be quizzed over, points possible, and points earned that contributed to their overall grade in the support course.
Individual Performance Sheets

The staff members were required to record the daily number of points earned by each student following the requirements of the support course. The purpose of this form was to show the allocation of points for each student. Each week a student's performance sheet was compared to the previous week's sheet to monitor whether or not an improvement in academic performance was occurring. The feedback coordinator also filled out performance sheets on the teaching assistants. This form showed the allocation of points for the teaching assistants' reliability of posting and recording scores, checking flashcards, attendance, and the management of their groups.

Graphs

Each staff member was required to keep a graph for each student in his group. They were responsible for recording daily percentages of their students' performances in turning in flashcards, reciting flashcards, and their grade received on weekly exams in general psychology.

Performance Contracting

There was an opportunity for the students to contract if they performed below 70% on their weekly quizzes in general psychology. The points they earned for this contract would count toward their grade received in the study-support course. This was done to decrease the likelihood of the students performing below 70% the next week. If the students performed below 70% during oral recitation of the daily...
objectives during study-support, they had to recite the objectives for that day over again. Whenever students were absent from study-support they had to recite any material they missed while absent from class. If they chose not to recite any of the material they had missed, they would lose all of the points for that missed day.

**Contracts**

Contracting was not required, but it enabled the student to earn up to half of the points previously lost for recitation. The teaching assistants would check the daily scores of each student. If on any day a student's performance fell below 70%, the staff member would notify the student of the opportunity to contract. The student received a blank contracting form and was required to have it filled out by the contracting supervisor if they desired to contract. The contracting supervisor made arrangements for the student to attend one of the teaching assistants' office hours. The student would be responsible for oral recitation of a specified number of objectives. All contracts had to be completed within 48 hours, except in the case of low performance on weekly quizzes given on Friday in general psychology. In this case, the students were able to request a contract Tuesday of the next week.

**Return to Baseline (Phase III)**

Return to baseline began after six quizzes were given in the study-support phase. All point contingencies for the one-credit-hour study-support course were removed. The students were still required
to attend the general psychology course twice per week, and they were required to take the weekly quiz given on Friday. The study-support course was still available to any student who wished to participate, but there were no points lost for any student who did not participate. Therefore, the points the students had earned up to week 11 would be the grade they would receive for the study-support course.

Experimental Design

This study used a reversal design (ABA) to evaluate whether students' weekly quiz scores would improve upon implementation of treatment. The ABA, within-group comparison design, was combined with the between-group comparison. The study-support students' quiz scores were matched to the nonMLK control group quiz scores for between-group comparison.

The study-support group took the support course, while neither of the control groups enrolled in the support course. Only the MLK control group had the opportunity to enroll. Each group was responsible for taking weekly quizzes in general psychology.

The duration of the first phase (baseline) for the support group was four weeks. However, the first quiz was not used because the material covered was not related to psychology. For this reason, there were only three data points during baseline used. The duration of the study-support condition was six weeks. Return to baseline began immediately after the study-support condition, and it was in effect for the remaining three weeks of the school semester.
CHAPTER III

RESULTS

The mean weekly quiz score for each group during the 15-week semester is presented in Table 2. The quiz score for the study-support group during the support course was 14.6. The MLK control group's average was 9.8. This difference was statistically significant at the .05 level as measured by the two-sample analysis T-test. There was no statistical difference between the MLK control group and the study-support group during the first baseline. The average weekly quiz scores for the nonMLK control group was 14.1; however, this difference was not statistically significant.

Table 2

The Average of the Weekly Quiz Score for All Groups During Baseline, Study-Support, and Return to Baseline

<table>
<thead>
<tr>
<th>Group</th>
<th>Study-Support</th>
<th>MLK Control</th>
<th>NonMLK Control</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baseline</td>
<td>12.5</td>
<td>10.4</td>
<td>13.5</td>
</tr>
<tr>
<td>Study-Support</td>
<td>14.6</td>
<td>9.8</td>
<td>14.1</td>
</tr>
<tr>
<td>Return to Baseline</td>
<td>12.6</td>
<td>4.7</td>
<td>14.4</td>
</tr>
</tbody>
</table>

During return to baseline, five of the seven students in the MLK control group had stopped taking weekly quizzes, although they continued to be enrolled in the course. This was one reason why there
was a rapid decrease in average quiz scores for this group (see Figure 1). The average quiz score for the MLK control group was 13.3 in baseline, 13.4 during study-support, and 16.0 during return to baseline for the remaining two students.

Figures 1 and 2 show the average quiz scores earned by the study-support group and the MLK and nonMLK control groups, throughout the study. The performances are essentially the same for the study-support group and the nonMLK control group during baseline, the study-support course, and return to baseline. On the other hand, there is a distinct difference between the study-support group and the MLK control group following implementation of study-support. The quiz scores are significantly higher and closer to the acceptable passing score of 15 points in the study-support group.

There was also a significant difference in the final course grades between the study-support group and the MLK control group at the .05 level. The final course grades between the study-support and the nonMLK control group were comparable (see Figures 3 and 4).

An anonymous questionnaire was used to obtain the estimated number of hours each student studied for the general psychology course, excluding the time in the Psychology 194 classroom and, if enrolled, study-support classroom time. This was given the week before the study-support course started and three weeks following the implementation of the study-support program. Baseline data for the number of hours the nonMLK control group studied was unavailable. The estimated amount of time the study-support and the nonMLK control group studied prior to the course was similar. After the
Figure 1. Experimental vs. MLK control average quiz score.

AVERAGE QUIZ SCORE

Baseline
Study-Support

MLK Control Avg.
NonMLK Control Avg.
Study-Support Avg.

Weeks
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20

1 2 3 4 5 6 7 8 9 10 11 12

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study-support course began, the estimated number of hours between the nonMLK control and support-group were similar, but the MLK control group's study time had decreased (see Table 3).

Table 3
Average Number of Hours Spent Studying Before and After Study-Support

<table>
<thead>
<tr>
<th>Group</th>
<th>Baseline</th>
<th>Study Support</th>
</tr>
</thead>
<tbody>
<tr>
<td>Study-Support</td>
<td>7.9</td>
<td>9.8</td>
</tr>
<tr>
<td>NonMLK Control</td>
<td>ND</td>
<td>8.5</td>
</tr>
<tr>
<td>MLK Control</td>
<td>7.2</td>
<td>6.9</td>
</tr>
</tbody>
</table>
CHAPTER IV

DISCUSSION

The experimenter collected data on the estimated number of hours each student studied for the quiz prior to and immediately following implementation of the study. This was done to evaluate whether time-management was a problem. If it were the case that the number of hours spent studying did not seem to be the problem, then the corrected flashcards from which the students studied would probably increase their performance on the weekly quizzes. These two study-skill deficiencies—time-management and studying the relevant material—were the primary focus of the study-support program.

The nonMLK control group consisted of students chosen from other general psychology sections because they had earned comparable baseline quiz scores as those in the study-support group. This control group, labeled "nonMLK," consisted of students with different high school GPA's and ACT scores. The MLK control group was not matched by their initial baseline quiz scores. They were simply other high-risk, black students enrolled in the general psychology course but not enrolled in the study-support course. These students were similar to the study-support group in that they were all admitted to the university on academic probation and had comparable high school GPA's as well as ACT scores (see Table 4).
Table 4

Average ACT Scores and High School GPA's
Study-Support Group vs. MLK and NonMLK Control Groups

<table>
<thead>
<tr>
<th>Groups</th>
<th>Study-Support MLK</th>
<th>MLK Control</th>
<th>NonMLK Control</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean High School GPA</td>
<td>1.89</td>
<td>1.9</td>
<td>2.3</td>
</tr>
<tr>
<td>Mean ACT Score</td>
<td>12.10</td>
<td>10.5</td>
<td>18.0</td>
</tr>
</tbody>
</table>

The students who enrolled in the study-support group chose to do so, and the students in the MLK control group chose not to enroll in the support course. For this reason the groups could be biased. The students in the nonMLK control group did not have the opportunity to enroll in the study-support group. Considering that the study-support group performed better at a higher percentage than the MLK control group during baseline as well as throughout the intervention, it would seem that the study-support group was not responsible for the statistically significant differences between the two groups. Because the experimenter could not randomly assign the students to each group, it could be the case that less motivated students, or those not able to estimate their performance in college-level courses, chose not to enroll in the study-support while more motivated students chose to enroll. Because of the comparison with the nonMLK control group, it seems likely that the study-support group would have done as well without the assistance of the study-support program. The implementation of the study-support program came close to demonstrating that
students who need academic assistance the most are least likely to ask for it.

There are a number of reasons that this program should have worked. One is that, in fact, the students sometimes turned in unanswered questions or objectives with the incorrect answers. Because their answers were corrected, it is especially puzzling as to why this considerable support did not improve the students' performance. Nonetheless, although there is every reason to think that this program should have worked, there are no data to support these reasons. Therefore, it is logical to assume that some motivational factor must have made a substantial difference between the two MLK groups. The lower grades received by the students in the study-support group prior to entering college may have functioned as a motivating condition that made being in a course with no assistance an aversive condition. This may have evoked the response of signing up for extra help. Perhaps low grades received by the MLK control group did not function as a motivating condition and, therefore, they did not emit the response of signing up for extra help (study-support). But even without the support course, the more motivated students might have studied more than the lower-motivated MLK control group and thus have obtained their higher grades anyway.

In future research, the experimenter should randomly assign students to each group to rule out motivation as a contributing factor. But random assignment of this sort seems unethical. Therefore, the next experimenter might compare two types of support groups with different support techniques functioning in each. This would enable
all students who wish extra help the opportunity to get it, and it would also allow the experimenter to evaluate which of the two treatments is the most effective.

Due to the incorporation of the nonMLK control group in the present study, the results suggest that there is a population of white students whose performance is comparable to the performance of high-risk, black students. Therefore, I would agree with Gosman et al. (1983) that programs designed for blacks may not be the correct approach if developed with the implication that race causes the problem. However, one must take into consideration that there is an overall higher percentage of blacks with academic deficiencies. For this reason, universities should take special interest in providing the needed services for this group of people who have been mistreated in history to such a great extent that this population tends to have severe academic deficiencies. However, it is important to place only the black students with those problems into the program because other blacks not in need of the program would be offended. Also, it would be a waste of the university's resources as well as the students' time and money to be enrolled in a program that they do not need.

In the present study, the support program was designed to assist any student who might have some problems with time-management or with studying the relevant rather than the irrelevant material for an exam. Each of the students who participated in the study had such problems, and they just happened to be black.

For future research, the experimenter should focus on the problems of the students rather than the problems of a race. This may
assist the experimenter in designing the program more specifically to solve a problem rather than designing a program for a particular race who may or may not have a variety of academic deficiencies.

One general problem among students is that those who need help the most are least likely to ask for it. Because this is generally the case, the decision to get help or not to get help should not be left up to the student. Most students are not authorities on their own academic deficiencies. Universities are competing with years of lack of learning, and many students with academic deficiencies have not been trained to use self-management skills. Consequently, students without such skills are sometimes categorized as "lazy" or "not serious students," when in actuality the student did not have the opportunity to acquire the skills needed. Students who in the past have been told to get help or they would flunk may not have received any aversive consequences following the statement. They continue to pass or get promoted even if some skill had not been acquired. For this reason, the statement "flunking" or receiving poor grades may not have been paired with enough aversive consequences to exert any control over the students' future behavior. Therefore, researchers or universities should find a way to require students to have mandatory exposure to the much-needed services. It is a disservice to admit students into a university realizing that, without particular skills, the student would inevitably fail. It would be better to make it mandatory that the students acquire the skills needed to increase the likelihood of passing their courses. This was attempted in the
present study. However, the students were not penalized if they did not sign up for the study-support program.

Finally, students least likely to sign up for a support program might be better subjects for the next experiment. By admitting only the students with academic deficiencies into the system, the experimenter may have a higher likelihood of determining whether or not the support program is effective in improving performance. In other words, it is much more difficult to improve the performance of a "B" student than that of an "A." It may be the case that it is more difficult to improve the performance of students whose performance level and skill level have been estimated to be approximately "C" average than that of a "B." Therefore, by having the underachievers in a support program, its effectiveness in improving performance may better be shown.
REFERENCES


Appendix A

Questionnaire and Course Evaluation
Individual Study Hours

Psychology 194

Section #

1. How many hours do you study a week for Psychology 194, excluding class time?

2. If in Psychology 397, how many hours do you study a week for Psychology 194, excluding class time and practice sessions?
Course Evaluation

Psychology 194 Course Evaluation

Section #

1. What were the best features of the lecture sessions?

2. What features should be change in the lecture?

3. What were the best aspects of your instructor's performance?

4. What aspects should be changed in your instructor's performance?

5. What do you think of the Malott & Whaley text?

6. What do you think of the packet of readings?

7. Did you make use of the 194 staff? ____Yes  ____No  Why or why not?

8. Overall, what were the best features in Psychology 194?

9. General comments:

Anticipated grade:

Number of hours you studied per week (outside of class):
Appendix B

Materials Used During Study-Support
Study-Support Attendance Verification Sheet

TA's Name: _________________________

CA: _________________________
Psychology 194/397 Study-Support

Study-Support Attendance Verification

Date______________ Contract Due______________

Student Name______________ Date Completed______________

Time In______________ Time Out______________

Comments:

In the space below, write the accomplishments you plan to produce during contracting with your teaching assistant.

Chapter Objectives: _______________ Permanent Product: _______________

Points Possible: _______________ Points Earned: _______________

Staff Signature
### Individual Grade Sheet - Psychology 194/397

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<thead>
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<th>Name</th>
<th>SSN</th>
<th>T.A.</th>
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<tbody>
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</table>

<table>
<thead>
<tr>
<th>Week</th>
<th>Mon</th>
<th>Tue</th>
<th>Wed</th>
<th>Thu</th>
<th>Wkly Cum</th>
<th>Cum</th>
<th>Contract</th>
<th>Quiz</th>
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</table>
To improve the probability of the students in the study-support course passing the midterm and the final exams given in general psychology, the experimenter offered additional out-of-class help. Because this service was not offered during regular classroom periods, an added incentive was introduced to make attending this service more desirable. The students who attended the out-of-class session would receive one of five bonus points offered towards general psychology. The students with the most answers correct during this session would receive three bonus points towards their study-support course grade.

The midterm, more so than the other weekly quizzes given in general psychology, was designed to see how well the students could apply the concepts learned rather than just memorizing the definition of those concepts. Below is the midterm given to all of the students enrolled in the general psychology course. An example of the midterm was placed here to better describe the difference between the regular exams and the final and midterm exams. The midterm exam was given on week five.

______

Midterm Exam

PSY 194 - Winter 1986 - Midterm Exam Form A

Name_______________________ SSN _________________ Sec __________

Write the letter which corresponds to the best answer in the space provided in the experiment. Please note that some answers may be used more than once, and some answers not used at all. You may answer any 20 of the questions you desire.

A. Conditioned reinforcer  N. Satiation
B. Unconditioned reinforcer  O. Deprivation
C. Conditioned punisher  P. Response (S)
D. Unconditioned punisher  Q. Stimulus
E. Antecedent  R. Explanatory fiction

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You are conducting an experiment to train a rat to make several different responses in the presence of different stimuli. Such differential responding in the presence of different stimulus conditions is known as (1)_____. First, you make sure that the rat has not had any water for 23 hours prior to the experiment. The operation of not allowing the rat to have access to water is known as (2)_____. This will increase the effectiveness of water as a (3)______ and increase the probability of any (4)_____ that has been followed by water. The sound of the dipper eventually becomes a(n) (5)______ for the response that comes just before it, due to a pairing of that sound and the presentation of water. The first response you want to train is lever pressing, but you notice that it never occurs. Thus, you begin using procedure of (6)_____ to teach the rat to press the lever. This involves giving water for responses, which more and more closely resemble lever pressing while using (7)_____ for any other responses which occur. After the rat presses the lever consistently, you begin to train it to press when a red light is on but not press the lever when the light is off. You do this by providing reinforcement for lever pressing when the red light is on and withholding reinforcement for lever pressing when the red light is off. The sight of a dark chamber (i.e., no light on) is a (8)_____ for the response of lever
pressing. The sight of the red light becomes a (9) , which is symbolized as (10) for the response of lever pressing. The sight of the red light and the dark chamber are both examples of (11) stimuli.

In the next condition, you want to train the rat to pull a chain when a tone sounds and press the lever when the red light is on. You provide water to the rat immediately after he approaches and then pulls the chain and withhold water when he does anything else. Several minutes later, the rat is pulling the chain consistently. The water functions as a (12) for chain pulling. A problem is then encountered in that the rat often presses the lever when the tone is on, even though you do not provide reinforcement for pressing in the presence of tones. You decide to present a brief electrical shock whenever the rat presses the lever when the tone is on, and continue to give water for chain pulling in the presence of the tone. After a few minutes of this, the rat stops pressing the lever when the tone is on and only chain pulls. The brief electrical shock is a (13) for lever pressing. The sound of the tone is a (14) for lever pressing and is sometimes written as the symbol (15) . The sound of the tone serves a different function for the response chain pulling and is a (16) . Both the shock and the water are examples of (17) stimuli. You, being new at this experimentation stuff, continue working with the rat for 2-1/2 hours and find that the rat's responding eventually slows way down and then stops. You can think of two possible reasons for this decrease. One possible explanation is (18) , which results from repeated contact with a certain
(19)_____ and decreases the effectiveness of stimulus as a reinforcer. Another explanation for this decrease in responding is (20)_____ in which a decrease in responding is accompanied by a decrease in overall activity level. You have been measuring the number of times the rat presses the lever per minute, which is your (21)_____ variable. Your friend walks in the lab and asks you what you are doing. You explain that you are conducting an (22)_____ conditioning experiment and describe the procedures.

The experimenter designed a practice exam similar to the midterm and offered that to the students in the study-support course who attended the special session. Following its completion, the students counted off into groups of four—all number ones in one group, all number twos in another group, etc. The experimenter then asked each person of a group to answer one of the questions on the practice exam, followed by an explanation of why he/she thought that was the correct answer. Although the students were in groups, when asked a question they had no help from the other students within or outside the group without losing the opportunity to receive a point.

This service was offered two days before the midterm and two days before the final examination date.
Appendix C

Analysis of the Number of Objectives Mastered by Students in the Study-Support Course
The students in the study-support course were required to review their flashcards for the first five minutes of class. Each student had two opportunities to recite all of the flashcards for that day to increase the likelihood that the student would receive all of his or her points.

There were no data on the number of students who recited the flashcards correctly the first time. The experimenter estimated approximately three of the 18 students in the study-support course regularly completed the requirements the first out of the two opportunities.

Table A shows the number of students that received over 90% during each Tuesday and Thursday of the study-support phase. During seven of the 12 days, over 50% of the students performed over 90% in the study-support course. This number reflects both the students who had to take one as well as two of the opportunities to receive all of their points.

| Class Periods | Tuesday | | Thursday | |
|---------------|---------| |---------|--------|
|               | Students | Students | Students | Students |
|               | Above 90% | Below 90% | Above 90% | Below 90% |
| 1.            | 11       | 7       | 9        | 9       |
| 2.            | 8        | 10      | 5        | 13      |
| 3.            | 10       | 8       | 13       | 5       |
| 4.            | 18       | 0       | 15       | 3       |
| 5.            | 12       | 6       | 9        | 9       |
| 6.            | 6        | 12      | 10       | 8       |
Table B shows the average study-support weekly grades in comparison to the average general psychology weekly quiz score. During four of the six weeks that the study-support course was offered over half of the students received a higher score in the weekly study-support course than on the general psychology quiz. This data would reflect any student who contracted that week to receive additional points. There are no reliable data to reflect the number of students who contracted each week.

<table>
<thead>
<tr>
<th># of Students with Study-Support Grades Higher Than General Psychology Quiz Grades</th>
<th>Average P397 Percentage</th>
<th>Average P194 Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. 6/18</td>
<td>74%</td>
<td>78%</td>
</tr>
<tr>
<td>2. 10/18</td>
<td>75%</td>
<td>74%</td>
</tr>
<tr>
<td>3. 3/18</td>
<td>76%</td>
<td>84%</td>
</tr>
<tr>
<td>4. 16/18</td>
<td>78%</td>
<td>65%</td>
</tr>
<tr>
<td>5. 12/18</td>
<td>78%</td>
<td>70%</td>
</tr>
<tr>
<td>6. 12/18</td>
<td>77%</td>
<td>72%</td>
</tr>
</tbody>
</table>
Appendix D

Analysis of ACT Scores and GPA's
There was no statistical significance between the study-support group and the MLK control group's average ACT or high school GPA scores as compared by the two-factor analysis T-test. On the other hand, there was statistical significance at the .05 level between the study-support group's ACT scores and high school GPA when compared to the nonMLK control group. Data suggest that the skill level of the MLK control group was comparable to the study-support group, yet the study-support group performed at a much higher level. Also, data suggest that the skill level was estimated to be much higher in the non-MLK group when compared to the study-support group, yet their performances were practically the same. Because of the above data, the experimenter suggests that this proves that there was another variable besides skill level that was the causal factor to the study-support group's out-performing the MLK control group.
### Table C

The Distribution (In Terms of Relative Frequency) of High School GPA's for Entering Freshmen at Western Michigan University, Fall, 1985

<table>
<thead>
<tr>
<th>Grade Point Average</th>
<th>Regular Admissions Black</th>
<th>Regular Admissions White</th>
<th>MLK Admissions</th>
<th>MLK</th>
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<tbody>
<tr>
<td>3.50 - 4.00</td>
<td>.06</td>
<td>.18</td>
<td>.00</td>
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<tr>
<td>3.00 - 3.40</td>
<td>.23</td>
<td>.30</td>
<td>.00</td>
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<td>No Data</td>
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<td>.00</td>
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<tr>
<td>Mean GPA's</td>
<td>2.74</td>
<td>3.10</td>
<td>1.95</td>
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</tbody>
</table>

D. L. Morris (personal communication, September 16, 1986)
H. Bates (personal communication, September 12, 1986)

In each of the three groups, the estimated skill level, shown in the average ACT score, was accurately representative of the students' GPA in high school. Because the GPA's of the MLK students are significantly lower than the other two groups, they are viewed as "high-risk," in terms of their likelihood of success in college.
Table D

The Distribution (In Terms of Relative Frequency) of ACT Scores for Entering Freshmen at Western Michigan University, Fall 1985

<table>
<thead>
<tr>
<th>ACT Scores</th>
<th>Regular Admissions</th>
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<th>MLK Admissions</th>
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</thead>
<tbody>
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<td></td>
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<tr>
<td>32-27</td>
<td>.00 .07 .00 .00</td>
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<td>02-00</td>
<td>.00 .00 .00</td>
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<tr>
<td>No Data</td>
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<td>ACT Ranges</td>
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</tr>
<tr>
<td>Average ACT Scores</td>
<td>14.48 22.18 11.13</td>
<td></td>
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</tr>
</tbody>
</table>

D. L. Morris (personal communication, September 18, 1986)
H. Bates (personal communication, September 12, 1986)

It has been well documented that the attrition rate is much higher among black students than it is among whites. This difference in attrition rates is even larger in institutions that are predominately white (Tracey & Sedlacek, 1985). Shown in the above data (as is often the case in other universities), the students with the most critical academic deficits are minority students. Recognizing this, researchers must be careful to focus their service efforts on variables that will directly influence students' academic performance.
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