AN EXAMINATION OF CERTAIN ACADEMIC BEHAVIORS OF

REMEDIAL COLLEGE FRESHMEN

by
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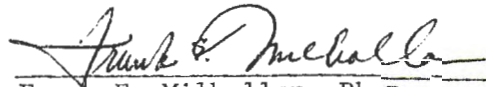of the requirements for the degree of
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Abstract

Title of Dissertation: An Examination of Certain Academic Behaviors

of Remedial College Freshmen

This study examined the variability in certain academic behaviors
of remedial college freshmen and investigated the predictive
relationship of four measures of these students' academic attitudes
and habits to those behaviors. The academic behaviors included
students' selection of an anticipated instructional pace; attendance
at optional lecture/discussion sessions; election of additional work
in preparation for unit tests; actual rate of progression through the
course; accuracy of anticipated pace selection; number of test trials
needed to pass each unit test; and attribution of failure for unit
tests failed. The 101 freshmen in this study were heterogeneous in
regard to race, sex, and past academic performance. They were
assigned to seven sections of a 15-week PSI remedial reading course,
based on Nelson-Denny Reading test scores between the 11th and the
28th percentiles. During the first week of the semester, students
were administered Rotter's I-E Scale, the Survey of Study Habits and
Attitudes, and the State-Trait Anxiety Inventory. The second week,
the students were oriented to the course structure by completing the
first instructional unit as a class. The students then proceeded
through the remaining seven units independently, at their own pace.
During the semester, their instructors compiled extensive data about

DEDICATION

To Dr. Muncie, who said he thought I should;

To Dr. Blair, who said she wished I would; and

To Dr. Friedman, who said, at last, he thought I could.

ACKNOWLEDGEMENTS

My gratitude is extended to:

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CHAPTER ONE

INTRODUCTION

It was the purpose of this study to examine the variability in certain academic behaviors of remedial college freshmen by documenting the actual behavior of these students in a remedial reading course-- behavior that would suggest to what extent remedial students are passive learners, are anxious and fear-ridden, can accurately assess their own skills and needs, can work independently, and will assume responsibility for their own academic fate. It was also the intention of this study to investigate the predictive relationship of four measures of these students' study habits and attitudes - Rotter's I-E Scale, both subscales of the Survey of Study Habits and Attitudes, and the trait anxiety subscale of the State-Trait Anxiety Inventory--to these academic behaviors.

Background of the Problem

Martha Maxwell, in the introduction to her book entitled Improving Student Learning Skills (1979) states, "The problem of underprepared students affects every institution--indeed, it is viewed as a national crisis." According to national surveys, the decline in basic skills (reading, writing, and mathematics) is a nationwide event. And, contrary to popular belief, it is one independent of race, socioeconomic status, or particular sections of the country. As of 1976, 67 percent of all colleges offered some form of skills courses. Over 54 percent offered courses of a remedial nature for

academic credit. Learning centers, often considered the home and heart of the remedial program, had been established at 43 percent of four-year colleges and universities (Levine, 1978).

The problem of the underprepared student is not a temporary concern, but rather a perennial one for American higher education according to Martin Trow (1982). And, the use of remedial work as a solution to this problem will only continue to rise according to him. In 1980-81, the number of remedial courses taught in colleges and universities across the country rose by 22 percent, 25 percent in private institutions and 19 percent in public. In 1982, the American Association of Higher Education dedicated its entire first issue of Current Issues in Higher Education to "The Underprepared Learner."

These facts and figures might suggest that the need for remedial services is rather new; in actuality, it is not only a current phenomenon but one with a long history. More than a hundred years ago, Harvard first offered a freshman English course at the request of faculty who were dissatisfied with students' skills in formal writing (Brubacher and Willis, 1976). And, Harvard was by no means alone. Because there was no national system of public high schools, almost every college in the country had to create some form of preparatory department to provide remediation. By 1895, 40 percent of the country's students were being admitted to colleges and universities from their own preparatory departments (Rudolph, 1977).

The remedial effort has continued to expand in the twentieth century--even in the most elite institutions. In 1907, half of the

students at Harvard, Yale, Princeton, and Columbia failed to meet entrance requirements. The 1930's saw the establishment of remedial reading centers. In 1936, New York University created a Reading Lab and in 1938, Harvard instituted a remedial reading course for its students. After the Second World War, the G.I. Bill not only enabled millions of former servicemen to attend college, but created an enormous need for reading and study skills programs. Eventually these programs became permanent campus resource centers available to all students (Brubacher and Willis).

It is apparent that remedial education is not new; however, the focus of its programs has changed in recent decades. In the 50's and early 60's, attention was directed toward high ability students performing poorly academically. In the mid-60's, colleges became much more interested in low academic-ability students. Federal programs such as Upward Bound in 1965 and Special Services to Disadvantaged Students in 1968 emerged. In the 1970's, there was a shift to an emphasis on learning styles and techniques. This produced individualized learning programs, mastery learning, learning labs, and programs specifically designed for low achievers (Levine, 1978).

There is great speculation concerning the reasons for the growing number of skills programs in higher education. Martha Maxwell maintains that there are four complex and interrelated events which have occurred in American higher education since 1960 that have been most important in creating a growing need for skills programs--open admissions, federal policies mandated to increase access to higher

education for educationally disadvantaged students, declining basic skills of high school students, and grade inflation. Other possible causes she cites include automatic promotion of students, decline in the amount of homework assigned, the hours students spend watching television, and a general decline in academic motivation.

Regardless of the reasons, the number of underprepared students continues to grow. During the 1980's, the number of traditional college students is declining owing to the cresting of the post-WW II baby boom. As this population continues to decrease, diversity will also increase as colleges try to fill their empty classrooms with nontraditional students.

Need for the Study

It is very difficult to distinguish this underprepared college student. There is reason to believe that most entering college students experience some problems in adjusting to college courses. Lowered standards, higher absentee rates, grade inflation, and a deemphasis on traditional college preparatory courses in high school have produced a generation of students that is weaker in skills than students of the 1950's (Maxwell). There has also been a decline in student willingness to invest substantial time and effort in the learning process. Many high school students appear to have become "disengaged from education" (Trow).

Is this to suggest, then, that most, if not all, entering college students are underprepared? The problem is not quite that extensive,

but these facts do suggest that it is important to examine carefully just who these underprepared students are.

In 1971, Patricia Cross profiled the "new students" in her book entitled, Beyond the Open Door. It was a profile of students who had been failed by traditional education in the past and would, she believed, be failed by education in the future unless substantial changes were made. She operationally defined the new students as those who score in the lowest third among national samples of young people on traditional tests of academic ability and who are in the bottom third of their high school graduating classes.

Cross maintained that these students are particularly failure-threatened. This fear of failure has developed as a result of the downward shift "new students" experience throughout their education. While the students in the top third remain secure in their position, the less skilled students continue to slip lower as those at the bottom drop out. Cross theorized that the failure-threatened students are motivated to protect themselves against failure by selecting either easy tasks where success is virtually assured, or by attempting tasks that are so difficult that failure is virtually guaranteed and that are, consequently, not threatening.

From interviews with community college counselors and instructors, Cross identified what she felt to be another important characteristic of the "new students." The major obstacle to learning for these low-achieving students was identified as their "passivity"; they quickly quit trying or they did not appear to want to make any

effort. These students seemed to be saying that they could not fail at what they did not try.

Not all researchers have agreed with Cross' profile of remedial students. Martha Maxwell has suggested that "despite the eloquent and passionate writings of such authors as Cross . . . , there is little evidence to support the contention that underprepared college students consistently have lower self-concepts than their more able peers. In fact, there is compelling evidence that just the opposite is often true" (p. 212).

Many remedial students are, according to Maxwell, confident of their ability to succeed in college. Often they express the sincere belief that they will make A's and B's. For those students who never earned grades that high in high scool, this may be a kind of "bravado" or denial. However, for other remedial students, confidence in their ability to make A's is based on the high grades they earned in academically weak high schools. They consider themselves well-prepared for college. Maxwell has suggested that the number of these "misprepared" students entering college will continue to rise.

Assumptions about the academic attitudes and behavior of the remedial students have influenced the design and development of college remediation programs to varying degrees. Most of the early programs were, and some of the current ones still are, simply extensions of the traditional curriculum to a less capable segment of the student population. Pat Cross (1971) has maintained that such programs are "woefully inadequate." New students are not the same as

traditional students according to Cross, and a few alterations in traditional education are very unlikely to make the program fit underprepared students any better. She has stated that "almost everyone agrees that there is an urgent need for educational reform; as yet, however, everyone does not agree on the direction that reformation should take." (p. 163).

Cross has suggested that underprepared students must be reoriented to the "learning task." They must be provided with ample practice in the process of learning in order to eliminate attitudinal blockages that have developed over past, unsuccessful educational experiences. She has theorized that "mastery learning is the revolutionary concept that lies at the heart of the new teaching strategies." (1976, p. 11). According to her, mastery learning will permit all students to reach the same high level of achievement although the time required to get there will vary.

Martha Maxwell is not so enamored of mastery learning. She has suggested that although courses taught with mastery learning methods have gained popularity within the last decade, they have also yielded more failures than successes. The reasons for these failures include assumptions about the learning process and characteristics of the learner that are inaccurate. More specifically, these assumptions include the belief that students will be self-directed and the belief that immediate feedback is always a good thing. Maxwell has suggested that neither of these beliefs may be true.

Martha Maxwell has stated that there are a number of other myths that hamper the effectiveness of remedial programs. One is that

students who need remedial programs will volunteer for them. College programs, she has claimed, find the reverse is true. Another is that slow learners learn best in small classes taught with group discussion methods. She has suggested that most studies actually show that high-ability students profit most from small discussion classes, while low-ability students achieve better in larger classes taught by a well-organized instructor in an authoritarian manner.

It is apparent that there is consensus on little, if anything, regarding remedial students. They have been profiled as passive, anxious, and self-effacing by some researchers. Others have described them as more like the better-prepared students. Those students, as profiled by Levine (1980), are self-concerned, non-ideological, career-oriented, and competitive. In addition, the remedial programs which have evolved for remedial students are as divergent in their methodologies as in their perspectives on the students for whom they were developed.

Much of this controversy is grounded in the mistaken belief that remedial students can be viewed as a homogeneous group. Many researchers speak of "the remedial student profile" as though it remains the same for all students who are skills deficient. This is an assumption that becomes less tenable as the college population continues to diversify. Although they are not as diverse as students at open-admissions institutions, the remedial students at Towson State University should serve as an illustrative example.

The Towson State University Remediation Program

In 1980, the Maryland Board of Trustees of the State Colleges and Universities established a new policy on admission requirements and academic standards. (Appendix A) The major focus of that policy is summed up well in an excerpt from their policy statement: "All entering freshmen will be given diagnostic/placement tests and those who fall below a predetermined standard will be required to take remedial programs." These new standards took effect with the entering class of fall, 1980. Of the 2,100 incoming freshmen at Towson State, approximately 400 scored below the 11th grade level in reading. Twenty-nine sections of remedial reading courses were offered that semester.

An examination of the high school performance of these remedial students quickly challenges the suggestion of a single "remedial student profile." Although all of these students scored below the 11th grade level on the Nelson-Denny Reading Test, their high school grade point averages were heterogeneous. Some of these students reflected the academic profile drawn by Patricia Cross; they had low high school averages (C or below) and low reading scores. Others, however, resembled the profile outlined by Martha Maxwell; they had relatively high averages (B or above) and low reading scores. The majority of the remedial students fell somewhere in between.

Informal observation over the first four semesters of Towson State's remedial reading program suggests that these underprepared students are as heterogeneous in their academic behavior and

attitudes as in their past academic achievement. The inability of the remedial staff to reach consensus on the best approach for remedial instruction is testimony to this diversity. The structure of the remedial reading course has been subject to constant revision. Some reading instructors believe that these students should be in a traditional lecture-discussion course where attendance and homework are strictly monitored. Other instructors believe that such strict supervision is unwarranted and smacks of oppressive *in loco parentis*.

This controversy suggests that the question should not be, "Which structure is best for 'the remedial student'?", but, rather, "Which structure is best for *which* remedial student?" It becomes increasingly important for research to investigate the diversity of academic behaviors among remedial students and to explore ways of anticipating these behaviors.

Statement of the Problem

Research on the academic attitudes and behavior of remedial college students is very limited. Most studies have not examined the remedial student, but rather the remedial program and its efficacy in improving grade point average. The few studies that have examined the attitudes and habits of these students have done so only as measured by standardized tests in relationship to GPA. Research on the remedial student which records actual behavior is extremely scarce. Such investigations are time-consuming. They require a degree of record-keeping which many researchers are unable or unwilling to maintain.

A lack of such research is unfortunate. At a time when the number of underprepared, non-traditional students is rapidly rising, it becomes increasingly important for studies to be undertaken which examine the actual behavior of students. It is not enough to examine the exit performance of remedial students; study of the process by which these students arrive at this end is also important. Assumptions about this process provide the rationale for significant curriculum and placement decisions. Dispenzieri (1971) notes in his discussion of remediation efforts, "These programs are operating under the handicap of insufficient empirical knowledge about the academic behaviors of their students." He goes on to suggest that, "such knowledge would permit more accurate estimates of the extent and type of remediation required and would provide a basis for designing innovative courses to meet the needs of these underprepared students." (p. 298)

It was the purpose of the present study to examine and document the academic behavior of remedial students--to record actual behavior that would suggest to what extent remedial students differ in their academic anxiety; in their passiveness as learners; in their ability to work independently; in the accuracy of their assessment of their own skills and needs; and in their ability to assume responsibility for their own academic fate.

It was also the intention of this study to investigate the relationship of four measures of students' academic habits and attitudes--Rotter's I-E Scale, both subscales of the Survey of Study

Habits and Attitudes, and the Trait-Anxiety subscale of the State-Trait Anxiety Inventory--to these behaviors. It was hoped that a significant relationship between the measures of academic habits and attitudes and academic behaviors would emerge. Information about this relationship would be useful to remedial instructors in identifying academic behaviors they might expect from their students. Such information would also be invaluable to academic counselors in making placement recommendations for remedial students. These students could be directed toward courses and programs which complement their academic behavior as suggested by their scores on the battery of predictor instruments.

The questions to be answered, then, were two: First, to what extent do remedial college students vary in their academic behavior? And second, can measures of academic attitudes and habits explain the variance in these behaviors?

Limitations of the Study

The subjects in this study were selectively admitted, full-time university freshmen. They do not reflect the "open-admission" student population that is frequently mentioned in the research on under-prepared students. In addition, the study did not include students who scored at the eleventh percentile or below on the comprehension section of the Nelson-Denny Reading test. These qualifications limit the generalizability of the findings of this study.

Definition of Terms

Academic behaviors are the actions and reactions of a student in an
instructional setting. The academic behaviors examined in this
study included selection of an anticipated instructional pace;
attendance at optional lecture/discussion sessions; election of
additional practice in preparation for unit tests; actual rate of
progression through the course; accuracy of anticipated pace
selection; number of test trials needed to pass each unit test;
and attribution of failure for unit tests failed.

Remedial students are those students whose skills and knowledge place
them in the bottom third of the student population in their
academic institution. (This term is synonymous with underprepared.)

Remedial programs are those programs that are designed to develop
students' basic skills (reading, writing, math) to a level from
which they can enter the regular college curriculum.

Mastery learning refers to the pedagogical concept that one unit of
information must be learned to a high level of competency (80
to 100 percent) before the next unit in the sequence is tackled.

PSI is an abbreviation for the Personalized System of Instruction.
(It is also referred to as the Keller plan.) This is a type of
mastery learning course in which students complete a required
number of instructional units at their own pace.

Internality or internal locus of control refers to a person's
belief that the outcomes of his behavior (his reinforcements)
are the result of his own doing.

<u>Externality</u> or <u>external</u> <u>locus</u> <u>of</u> <u>control</u> refers to a person's belief
that the outcomes of his behavior (his reinforcements) are the
result of chance, fate, luck, or more powerful others.

<u>STAI</u> is an abbreviation for the State-Trait Anxiety Inventory.

<u>SSHA</u> is an abbreviation for the Survey of Study Habits and Attitudes.

CHAPTER TWO
RELATED RESEARCH

This review will consider relevant research on the major issues considered and on the predictive instruments used in this study.

First, research on remedial students will be examined, with emphasis on their academic attitudes and habits. Next, the instructional programs which are based on assumptions about the academic personality of these students will be examined. Special attention will be given to the Personalized System of Instruction (PSI), the program used in this study. Finally, research on the predictive instruments used in this study--Rotter's I-E Scale, the Survey of Study Habits and Attitudes, and the State-Trait Anxiety Inventory-- will be reviewed.

Remedial Students

The diversity of opinion on the characteristics of remedial college students found in the literature is quickly evidenced. As mentioned in Chapter One, Patricia Cross (1971) portrayed these students as those ignored by traditional education. She described them as consistent failures with no, or severely diminished, academic risk-taking skills. She also suggested that the new students are more interested than traditional students in grades and other extrinsic rewards. They prefer to learn what others have said rather than to engage in intellectual questioning. They tend to have a more pragmatic and authoritarian system of values than traditional students.

Other investigators have concurred with the image of the underachiever that Cross drew. Atkinson and Feather (1966) concluded from their research that the failure-threatened personality defends himself against failure by selecting tasks where either success or failure is certain. They theorized that this strategy may account for the highly unrealistic aspirations and expectations of low-achieving students. Roth and Meyersburg (1963) delineated six characteristics of low achievers: (1) they spend much of their time with friends or fantasizing; (2) they prepare only partially for exams; (3) they expend most of their energy maintaining the status quo; (4) they are self-deprecating; (5) they lack a clear set of personal goals; and (6) they are passive.

A decade later, Roueche and Kirk (1973) corroborated much of this research. They found that nontraditional students are characterized by feelings of powerlessness, worthlessness, and alienation. Much like Atkinson and Feather, their research showed these students to demonstrate inappropriate adaptive behaviors such as unrealistic levels of aspiration and a lack of problem-solving skills. Moore (1970) found that the new students tend to have inconsistent high school records, unimpressive standardized test scores, and race/cultural/class distinctions that place them at a disadvantage with the majority of students. He suggested that such students are no strangers to failure and are often the object of deliberate professional neglect. Dispenzieri (1971) found that underprepared students had unrealistic overaspirations and held their instructors in low esteem.

In marked contrast to these researchers, Martha Maxwell found most underprepared students to be quite confident of their chance for success. According to her investigations, many have a record of success--A and B averages in academically weak high schools--and they expect to continue in that same direction. Maxwell labeled these students "misprepared." Coleman (1966) attributed differences in aspirations between low-scoring majority and minority students to this same kind of unrealistic grade assessment. He maintained that black students have a higher self-respect than low-performing white students in suburban schools because they perform well by the standards of their own schools.

Martha Maxwell also suggested that underprepared students' academic problems often stem from their own attitudes, expectations, and emotional outlook. Rather than realistically acknowledge the existence of their skills deficiencies and the work required to remediate them, they are often convinced that "the curve for their academic inadequacies is a formula, short course, or a new technique that will alleviate their symptoms and one that will require minimal effort and time." (p. 51) Maxwell labeled this their "mystical faith in a magic cure."

Remedial Programs

As mentioned in Chapter One, assumptions about the academic personality of remedial students have influenced both the philosophical basis and the practical implementation of college

remediation programs. In recent years, most remedial educators have recognized a need for innovative remedial programs designed specifically for underprepared students. A review of the research, however, attests to the lack of consensus on just what shape these programs should take.

Pat Cross (1971) stated that underprepared students need a fresh orientation to the learning task. The attitudinal blockages they have built up through repeated. unsuccessful educational experiences have to be removed. As mentioned in Chapter One, she theorized that "mastery learning is the critical missing link in the education of low achievers." (1976, p. 18) Her list of advantages to this method was both cognitive and affective. Mastery learning requires the underprepared student, who rarely has enough time to become minimally knowlegeable about a unit, to master one unit in a learning sequence before proceeding to the next. At the same time, this mastery demonstrates to the student that he is capable of doing nearly perfect work.

Ralph Tyler (1970) echoed many of Cross' recommendations in his description of the requirements for effective learning in remedial programs. He maintained that the student must: (1) have a clear idea of what he is trying to learn; (2) be given ample opportunity for practice; (3) be provided with feedback on his performance; and (4) be given a sequential organization of learning experiences. Roueche and Kirk (1973) outlined several criteria for an effective remedial program: (1) the curriculum offerings should be relevant; (2) grading

policies should be nonpunitive; (3) students should be permitted to learn at their own pace; and (4) peer tutoring should be incorporated.

One recommendation of all these researchers is individualization of instruction. Other investigators have also supported this concept. Santeusanio (1974) suggested that college reading and study skills programs would be more effective if instructors provided different teaching methods for different students. Cronbach and Snow (1977) elaborated on this by recommending that remedial treatments should not be designed to fit the average person, but to fit groups of students with particular aptitude patterns. They defined aptitude as "any characteristic of the individual that changes his probability of success in a given treatment." Finally, Anderson (1974) concluded from an evaluation of college reading and study skills programs that " . . . programs would be more effective if instructors provided different teaching methods for different students." (p. 196)

Several specific instructional methods have emerged within the past two decades which have attempted to meet the recommendation for individualization made by these researchers. Although these approaches were not specifically designed for underprepared students, they have been suggested by more current researchers as possible techniques for these students.

As early as the 1950's, programmed instruction was being heralded as an individualized approach to learning for both traditional and remedial students. It was based on the following learning principles: active student participation, clear and explicit goals of learning,

small units of information, immediate feedback and evaluation, and self-pacing (Cross, 1976). Research suggests, however, that not all students with weak skills can be helped by this method. Hartley (1968) for example, found that "anxious introverts" tended to complete programmed materials whereas "stable extroverts" did not.

In the 1960's, computer-assisted instruction (CAI) was heralded as the ultimate instructional vehicle for individualization of instruction. At that time, however, the hardware and the limited availability of software made the method cost prohibitive for most institutions. It is only recently that costs have been reduced significantly through the introduction of micro- and mini-computers. One constant caution about this new technology is, however, not new. In 1970, Coulson warned educators not to be deceived by the motivational high students initially experience when working with computers. He suggested that the novelty effect could not be expected to have permanence. He believed that the content material must have intrinsic interest beyond the mechanical gadgetry.

Another increasingly popular instructional approach is Computer-Managed Instruction (CMI). Kelly (1968) created one of the earliest CMI programs. Entitled "TIPS" (Teaching Information Processing System), it was designed to individualize instruction in economics. Essentially the approach consisted of a series of diagnostic tests, which channelled students into a variety of instructional methodologies including attendance at lectures, help in a small group setting, or traditional homework assignments. The course instructor

received cumulative information on all students individually and as a class. More recently, a similar program, RSVP (Response System with Variable Prescriptions), has been instituted at Miami-Dade Community College in Florida (Cross, 1982). In this program, the computer is used to score diagnostic tests and then to prescribe appropriate assignments. It also has the task of maintaining records on both an individual and class basis.

The Audio-Tutorial approach is a third instructional method which emphasized individualization through self-pacing. It was originally conceived by Postlethwait (1969) at Purdue University and has three distinguishing components: independent study sessions involving numerous media, a general assembly used by the instructor for guest lectures and major exams, and integrated quiz sessions which take place in small groups. This method is remarkably similar to PSI, the instructional approach used in the current study. The major distinction between the two is the emphasis in PSI on written communication as opposed to the multimedia emphasis in the Audio-Tutorial approach.

PSI: The Keller Plan

The Personalized System of Instruction (PSI) is a type of mastery learning course first used by Fred Keller at Columbia University. There are five features which distinguish PSI from conventional teaching procedures (Keller, 1968). The first is the self-paced feature which permits the student to move through the course at a speed commensurate with his ability and other demands upon his time.

The second is the mastery learning feature which lets a student go ahead to new material only after demonstrating mastery of that which preceded. The third is the use of lectures as vehicles of motivation rather than as sources of critical information. The fourth is the emphasis on the use of the written word in teacher-student communications. And, the fifth is the use of proctors which permits repeated testing, immediate scoring and feedback, and almost unavoidable tutoring.

There have been numerous studies which suggest that students learning in a PSI course achieve at higher levels than students learning in a more traditional lecture format. Morris and Kimbrell (1971) found a five-point advantage for the PSI group over the traditional group on a 40-point final test. On a 100-item final exam, Sheppard and MacDermot (1970) found that the mean score for PSI students was 73.1 as opposed to 66.8 for traditional students. Cooper and Greiner (1971) found that even five months after the end of the course, PSI students still performed at a significantly higher level than the lecture-method group.

A number of studies have been done that examine locus of control and academic achievement in a Personalized System of Instruction course. Johnson and Croft (1975) found no relationship between locus of control and three indicators of PSI course performance (grades, time to completion, and attendance). Daniels and Stevens (1976) did find superior performance on the part of internals in a self-paced course that was very similar to the PSI design. Allen, Giat, and

Cherney (1974) found that internals contracted for and earned higher grades than externals. Keller, Goldman, and Sutterer (1978) found that locus of control was related to academic attitudes but not to achievement in a PSI course.

The question of the appropriateness of this course structure for one type of student versus another has been well debated. As mentioned in Chapter One, Martha Maxwell has stated that one of the myths that hamper the effectiveness of remedial programs is that mastery learning methods like PSI are an unqualified success. She found that remedial students are more successful in larger classes taught in an authoritarian manner and less successful in self-paced, mastery learning courses. Even Pat Cross (1976), one of the strongest advocates of this type of learning, has suggested that remedial students who have not experienced success in school-related tasks are especially likely candidates for problems with procrastination and subsequent withdrawals in PSI courses.

Born and Whelan (1973) found that academically less successful students withdrew more often than those who had higher GPA's. On the other hand, Newman (1972) found that grade point average was not a reliable predictor of which students would successfully complete a PSI course. Hess (1971) found that low GPA students selectively withdrew from PSI courses even though they were mastering the units satisfactorily. They were, however, doing this at a rate too slow to finish the course work in the fixed amount of time available.

There is much research support for the notion that the Personalized System of Instruction correlates positively with

academic achievement; there is further evidence that it has met with some success in remedial programs. These are not, however, the reasons PSI was chosen for use in this study. It was chosen because it was the instructional method that could provide the greatest degree of freedom for students to demonstrate the academic behaviors under examination in this study.

Measures of Academic Habits and Attitudes

Extensive research has been done which examines the academic personality characteristics of college students. Often these traits include attitudes toward teachers and the educational enterprise; study habits, procrastination tendencies and anxiety; and, acceptance of responsibility for one's academic fate. Much of this research has demonstrated the usefulness of measures of these traits in accounting for academic behaviors and exit performance. Although few of these studies deal specifically with underprepared students, an examination of such research is still of major interest to educators of remedial students and to the current investigation.

Rotter's I-E Scale: Locus of Control

Locus of control and its relationship to academic behaviors has been an area of considerable investigation. In the monograph (1966) in which he presented the I-E Scale, Rotter distinguished the characteristics of an individual with strong internality from those of a person with strong externality. The internally controlled person perceives a situation or event as contingent upon his own behavior;

the externally controlled person believes an outcome is often the result of luck, chance, fate, or powerful others. Rotter further suggested that performance differs according to the individual's perceived locus of control.

Since the publication of Rotter's monograph, many researchers have substantiated this distinction in perceived locus of control and its relationship to academic behavior. Corah and Boffa (1970) found that externals do not adapt or learn as logically as internals. Barron and Ganz (1972) found that internals perform better than externals when feedback is verifiable but externals perform better when the feedback is spurious. Rotter and Mulry (1965) found that internals took longer to make a decision than did externals in skill-determined tasks; externals took more time when the task was chance-determined. Wolk and DuCette (1973) reported a significant relationship between persistence and locus of control. Externals were characterized as low persisters.

Locus of control and its specific relationship to achievement has been a broad area of investigation. However, the results have been, for the most part, ambiguous. Phares (1976), in his review of the research, concluded that internality does tend to be related to academic performance. Lefcourt (1976), by comparison, published a review that same year that concluded that the studies "are often riddled with inconsistent . . . results."

Prociuk and Breen (1974) found a relationship between perceived locus of control and achievement. Three studies (Allen et al., 1974;

Daniels and Stevens, 1976; Parent, Forward, and Mohling, 1975) found an interactive relationship between locus of control, course structure, and achievement. Externals performed better under highly-structured conditions; internals performed better under more loosely-structured conditions. Warheime (1972) found some support for the locus of control/achievement relationship for college males but not for college females.

Skepticism is raised by an equal number of research studies which do not demonstrate any significant relationship between locus of control and achievement. Johnson and Croft (1975) found no differences in achievement due to locus or course structure. Blustein (1979) found no relationship between the locus of control of remedial students and their grades. Hjelle (1970), who also found no relationship between locus of control and achievement variables, accounted for this by hypothesizing the existence of an overabundance of college students who are external as a defense against failure.

The Survey of Study Habits and Attitudes

Brown and Holtzman conceived of the Survey of Study Habits and Attitudes (1953) as an instrument to aid in understanding students with academic difficulties. The Study Habits subscale was designed to measure behavioral tendencies associated with effective academic work such as promptness in dealing with assignments, ability to deal with distractions and stay "on task," and the use of effective study procedures. The Study Attitudes subscale, on the other hand, was designed to measure academic opinions and beliefs such as the

student's attitude toward teachers. teaching methods, and educational objectives and requirements. Since its development in 1967, the college form of the test has been a part of many research investigations.

Much of the research has examined the effectiveness of the SSHA as a predictor of academic achievement; unfortunately, most of it relates to the total. rather than the remedial college population. In exploring performance in an upper-division course, Franklin (1975) found that study skills as assessed by the SSHA made a greater contribution than college grade point average in explaining self-paced achievement. Lin and McKeachie (1970) found that students' study habits as measured by the SSHA contributed to academic achievement independent of college aptitude. Meehan (1974) found a significant relationship between high and low academic performance groups and all seven variables of the SSHA.

In the early 1970's. considerable research utilizing the SSHA was done with students from low socioeconomic backgrounds or from minority groups. It was often assumed in this research that these students were remedial; however, achievement pretesting was not often done. In a study of college freshmen from low socioeconomic backgrounds. Cazzelle (1970) found the SSHA to be useful in differentiating between academically successful and unsuccessful students. Also in 1970, Curl found differences on all seven subscales of the SSHA between academic achievers and nonachievers to be significant. Shaffer (1973) found that performance on the SSHA consistently differentiated low and high achieving disadvantaged minority students.

Mittanck (1974) also found a positive relationship between the SSHA and academic performance. He concluded that this was a valid instrument for black students and could be utilized in working with less successful students. Ironically. Mittanck also concluded that the SSHA made no independent contribution to prediction of academic performance over the prediction obtained from ability scores and high school grade point average. McCausland and Stewart (1974) found similar results. The combination of high school grade point average and ACT combined score was the best predictor of college GPA. The SSHA overlapped, rather than improved upon, this combination as a predictor.

Several studies have utilized the SSHA in examining students who have demonstrated college success or failure. Montgomery (1969) found that successful students in a community college had higher scores in all seven areas of the SSHA than unsuccessful students. By comparison, Jack Russell (1969) found that there was no significant relationship between the SSHA and withdrawers versus persisters. It should be noted that most, but not all, students withdrew for academic reasons. Finally, Caldwell (1976) found that unsuccessful, reinstated students scored lower on the SSHA than students who had been reinstated and were academically successful.

The State-Trait Anxiety Scale

The State-Trait Anxiety Scale, developed by Spielberger (1968), has also been used in examining academic behavior and achievement. It was designed to be particularly useful in determining the extent to

which emotional problems contribute to academic difficulty. According to validity estimates, it is essentially unrelated to intelligence or aptitude.

Although Spielberger cautions against use of the STAI as a screening measure, many studies have been done examining the effectiveness of this test as a predictor of academic achievement. Nelson (1972) found that A-Trait levels were significant contributors to prediction of GPA for college students. Allen (1970) found moderate correlations between the STAI and academic performance. Nixon (1970), in a study examining the relationships between A-Trait and A-State with the approach of final examinations, found that the GPA's of high A-Trait students were significantly lower than the GPA's of low A-Trait students.

Mote (1972) examined the relationship of student perceptions of grades with achievement, attitudes toward study, and anxiety concerning academic achievement. His results showed no relationship between perceptions of grades and A-Trait. Finally, McMillan and Osterhouse (1972) studied the effectiveness of desensitization therapy upon academic performance. Their findings suggest that this type of therapy is not as effective with high A-Trait students as it is with those who are low A-Trait.

Summary

It was the intention of this review to examine literature relevant to remedial college students. More specifically, it intended

to review research on the academic personality characteristics of
remedial students; on the remedial programs based on these
characteristics and designed to assist these students; and, on the
academic personality measures used in this study as predictors of
academic behavior. Although there seem to be occasional points of
agreement among researchers, there appears to be no true consensus
regarding remedial students. A particularly noteworthy paucity in the
literature is that of studies which document the actual classroom
behaviors of underprepared students.

CHAPTER THREE

METHODOLOGY

This study examined and documented the variability in certain academic behaviors of remedial freshmen and investigated the predictive relationship of four measures of these students' academic attitudes and habits to these behaviors. To accomplish this, students were first tested and then placed in a PSI remedial reading course. Then, as the students worked through the seven instructional units, course instructors recorded their actual behavior. Finally, the seven criterion variables derived from these data and their relationship to the predictor variables were analyzed and discussed.

Subjects

The subjects selected for this study were Towson State University freshmen who were enrolled in a self-paced PSI remedial reading course during the fall semester. The students were assigned to this course as a consequence of their performance on the Nelson-Denny Reading Test, administered during July and August of that year. They had scored between the 11th and 28th percentiles (freshmen norms) on the comprehension subtest.

A total of 101 students. 62 females and 39 males, participated. They ranged in age from 17 to 22; 65 were white and 36 were black. The students were heterogeneous in regard to past academic performance. Their high school grade point averages ranged from 1.87 to 3.57 with a mean of 2.69 and a standard deviation of .426.

Procedure

Before the semester began, the four course instructors participated in a two-day orientation and workshop presented by the study director. As preparation for the workshop, they read two articles, J. B. Rotter's monograph on locus of control (1966) and Fred Keller's definitive article on PSI (1968), and an abstract of the research study to be undertaken. During the workshop, the instructors were acquainted with the course syllabus (Appendix B); the instructor's assignment and attendance sheet to be kept on each student (Appendix C); the Student Pace Selection Sheet (Appendix D); and the Course Quickie Reference Sheet (Appendix E). They were given specific guidelines on how to conduct both lecture and lab sessions, and instructions for data collecting, response rating, and recordkeeping.

During the first week of the semester the students, who had been randomly assigned to seven sections of the course, were administered Rotter's I-E Scale. the Survey of Study Habits and Attitudes, and the Trait Anxiety subscale of the State-Trait Anxiety Inventory. On the first day of class, students were given an orientation to the PSI method. They were given the syllabus which outlined assignments and the grading policy. They were also provided with an assignment sheet so that they could keep a record of their work, if they wished (Appendix F).

Instructors used the next two weeks of the semester to introduce the course text, structure, and procedures to the

students. This introductory unit was done as a class; attendance was required. At the end of the unit, students were asked to select a pace at which they felt they would proceed through the remaining seven units in the course and record that pace on their Pace Selection Sheet. Students were also given a Quickie Reference Sheet, to be used as a reminder of the course structure, assignments, and procedure.

The rest of the semester was divided into lecture/discussion and lab sessions. Only the seven lecture sessions were scheduled and they were intended as an amplification of the text, not as a presentation of new materal. Attendance was not required. The 28 other class meetings were used as lab sessions in which students had assignments checked and took unit tests. Students worked independently and at their own pace.

During the semester, the course instructors recorded extensive information about each student on individual student assignment and attendance sheets. This information included:

1. Anticipated pace selection.

2. Attendance at both lecture and lab sessions.

3. Completion of assignments.

4. Elected additional work (construction of sentences using the unit vocabulary words).

5. Scores on all unit test and retests, and the dates they were taken.

6. Responses to unit tests failed.

7. Required supplemental work assigned and completed.

At the end of the semester, the seven criterion variables were derived from this information.

The instructors met weekly with the study director to discuss procedures, students, and potential problems. At these meetings, the three forms of each unit test with answer keys were distributed. In addition, these occasions were used to rate student responses to failed unit tests. Each response was rated by all five instructors and an average score was then derived.

Criterion Variables

This study focused on the documentation of academic behaviors of underprepared college students. During the 15-week remedial reading course, student behaviors were observed and recorded by the course instructors. From these data. these seven criterion variables were derived:

Anticipate Pace Selection

This was the rate at which the student anticipated proceeding through the course. After completing the introductory unit with the class. each student was asked to select the pace at which he believed he would proceed through the remaining seven units in the course. He was given three choices:

Accelerated - Completion of all units after 10 weeks (and five weeks before the end of the semester).

Rapid   - Completion of all units after 12 weeks (and three weeks before the end of the semester).

> Moderate — Completion of all units just within the 15-week semester.

He then recorded his choice on an <u>Instructional</u> <u>Pace</u> <u>Selection</u> <u>Sheet</u> (Appendix D) and submitted it to his instructor.

<u>Accuracy</u> <u>of</u> <u>Pace</u> <u>Selection</u>

This was a score which represented the difference between the anticipated pace the student selected at the beginning of the course and the pace at which he actually completed the course. Negative scores on this variable represented the number of weeks below the number anticipated it took the student to complete the seven instructional units. Positive scores represented the number of weeks above the number anticipated.

<u>Rate</u> <u>of</u> <u>Progression</u>

This was the rate at which the student actually completed the eight instructional units. The five rates which were used to describe the students' progress were adopted from those designed by Sutterer and Holloway (1975). They represented a qualitative aspect of the student's progress which is not captured by the quantitative pace described in the two previous variables.

> High rate — a consistently high rate of performance with completion of the course at least three weeks before the end of the semester.

> Steady rate — a steady rate of performance with completion of the course just within the semester.

Delayed-interval rate- a long delay (at least three weeks)
before attempting the first
independent unit test followed by a high
rate of performance to complete the
course just within the semester.

Below-standard rate - a very slow rate of performance with
failure to complete all the instructional
units within the semester.

Drop-out rate   - course participation for less than
three weeks with no unit tests attempted.

Lecture Attendance

This was the percentage of applicable lectures attended by the student. (A lecture was no longer applicable if a more rapidly moving student had already completed the unit being discussed.) Attendance at lectures was optional. Students were made aware that everything presented in the lecture was also covered in the text. Each unit lecture was intended to clarify the topic. It was designed for students who desired an opportunity to hear an amplification of the text, to interact with the instructor and/or to participate in class discussion.

Elected Extra Work

This was the number of units for which the student elected to do additional work. A student could choose to prepare for a unit test by constructing sentences using the unit vocabulary list. (This was the list from which words for the unit test were selected.) These sentences

were reviewed by the instructor and returned to the student before the unit test.

Unit Test Trials

This was the average number of attempts required by the student to pass a unit test. A passing score was 80 percent. Students who failed a unit test had to do supplemental exercises and then take an alternate form of the test.

Attribution of Failure

This was a measure of the student's perception of responsiblity for failure. When a student failed a unit test, he was asked, "Why do you think you failed this test?" His response was recorded by the instructor. It was later categorized as external, ambivalent, or internal by a rating panel of five instructors. The attribution-of-failure score is an average of all the student's responses over the semester. Scores could range from +1 (internal) to -1 (external).

Predictor Variables

The second focus of this study was to investigate the predictive relationship of four measures of underprepared students' academic attitudes and habits to their academic behavior as expressed by the seven criterion variables. These four predictive measures included:

Rotter's I-E Scale

This is a measure of locus of control, an index of responsibility attribution. Individuals who think of themselves as

responsible for their own behavior are internally controlled. Those who attribute responsibility to luck, fate, or powerful others are externally controlled.

The scale consists of 23 locus of control items and six filler items. These items are not arranged in a difficulty hierarchy, but are samples of attitudes in a wide variety of situations. The test is an additive one; items are not comparable. This tends to yield conservative estimates of the coefficient of internal consistency using the split-half or match-half techniques (Rotter, 1966). Internal consistency estimates of reliability that range from .65 to .79 and test-retest coefficients for varying samples and time periods that range from .49 to .83 are reported by Rotter (1966).

In Rotter's monograph, conclusions are based on two factor analyses. The findings from a study of 1,000 cases indicate that all items load significantly on a general factor which account for 53 percent of the total scale variance. The second study also found that much of the variance is accounted for in a general factor. (The precise percentage of variance accounted for was not stated.) Rotter (1975) considered the I-E Scale to be unidimensional.

Some subsequent investigations have taken exception to Rotter's conclusion. Mirels (1970) identified two factors. Gurin, Gurin, Lao, and Beattie (1969) identified four factors. Hardy and Wolk (1974), on the other hand, found no support for the existence of identifiable subfactors in the I-E Scale.

The <u>Study</u> <u>Habits</u> <u>Score</u> (from the Survey of Study Habits and Attitudes)

This score is a measure of study habits, stable behavioral tendencies or strategies for dealing in an academic setting. They include promptness/procrastination preference, academic coping mechanisms, and study procedures.

The <u>Study</u> <u>Attitudes</u> <u>Score</u> (from the Survey of Study Habits and Attitudes)

This score is a measure of study attitudes, feelings toward the academic enterprise. They are enduring predispositions to behave in a consistent way toward such academic entities as teachers, instructional methods, educational objectives, and academic requirements.

The Survey of Study Habits and Attitudes (form C) is comprised of four 25-item subscales: Work Methods, Delay Avoidance, Teacher Approval, and Educational Acceptance. The first two subscales yield a score for Study Habits; the last two subscales yield a score for Study Attitudes. A seventh, total score is labeled Study Orientation. The differentiation of four SSHA subscales must be viewed with caution, however. Intercorrelation coefficients for subscale scores range from .49 to .70. The highest intercorrelations are found between the two study habit subscales (.70) and the two study attitude subscales (.69). These figures are, at best, only minimally supportive of the notion of four distinct subscales which measure four unique traits. They are much more supportive of the notion of two subscales, Study Habits and Study Attitudes.

Test-retest reliability coefficients for the four subscales are quite high. The lowest scores range from .83 for the 14-week coefficients to .88 for the 4-week coefficients.

Validity estimates were made through a partial correlation (.43) between the SSHA and grades with aptitude levels held constant. (Brown and Holtzman, 1967). This figure suggests that the SSHA is not simply a measure of aptitude. This notion is further substantiated in a study by Goldfried and D'aurilla (1973). They found a significant correlation (.34) between SSHA scores and study effectiveness ratings by peers, but not between SSHA scores and SAT total scores (.05).

The Trait Anxiety Subscale (of the State-Trait Anxiety Inventory)

This subscale measures trait anxiety, a relatively stable condition of anxiety proneness which varies from one invididual to another.

The total inventory consists of 40 items. Twenty statements ask subjects to describe how they generally feel (A-Trait); another 20 statements ask subjects to describe how they feel at that moment in time (A-State). The inventory is designed to be self-administering. Subjects respond by rating themselves on a four-point scale. It is important to note that, according to the test manual, most persons with fifth grade or sixth grade reading ability spontaneously respond to all of the STAI items without special instructions or prompting.

Test-retest reliability correlations for the A-Trait scale for male and female undergraduates over a six-month period were .73

and .77, respectively. This indicates that the Trait scale is quite stable. Test-retest reliabilities for the A-State scale over a six-month period were relatively low, .31 and .33, indicating that the A-State does not measure a persistent characteristic of the individual (Spielberger, 1970).

Validity estimates of A-Trait scores were made through correlations with the Institute for Personality and Ability Testing Anxiety Scale, the Manifest Anxiety Scale, and the Affect Adjective Checklist. The coefficients were .75, .80, and .52, respectively for 126 college women; they were .76, .79, and .58 for 80 college men (Spielberger).

Analysis

This study was designed to examine two questions. First, to what extent do remedial college students vary in their academic behavior? And second, do measures of academic attitudes and habits explain the variance in these behaviors?

In order to investigate the first question, frequency tables and/or means and standard deviations were compiled for the seven criterion variables: anticipated pace selection, accuracy of pace selection, lecture attendance, elected extra work, unit test trials, attribution of failure, and rate of progression.

To examine the second question, the relationships between the four predictor variables and six of the criterion variables were

analyzed through a linear multiple regression procedure. The relationship of the seventh criterion variable, rate of progression, to the four predictor variables was analyzed through a discriminant analysis procedure.

CHAPTER FOUR

RESULTS

This study examined the variability in academic behaviors among remedial college students and the ability of four predictor variables to account for that variability. To consider the first question, "To what extent do remedial students vary in their academic behavior?", frequencies and/or means and standard deviations are presented for the seven criterion variables. To consider the second question, "Do the four predictor variables account for this variability?", multiple regression analyses for six predictor variables and a discriminant analysis for the seventh, rate of progress, are presented.

Variability in the Academic Behavior of Remedial College Students

In response to the question, "To what extent do remedial students vary in their academic behavior?", extensive differences among students were found on all seven criterion variables.

Table 1 shows the variation in students' selection of an anticipated instructional pace as recorded on their Instructional Pace Selection Sheet. This is the pace--moderate, rapid, or accelerated-- at which the students thought they would complete the course.

Table 2 shows the variability in accuracy of pace selection among students. This variable is measured as the difference between

Table 1

Students' Selection of an Anticipated Instructional Pace $(N = 99^a)$

Anticipated Pace Selected	Frequency	Percent
Accelerated	6	6.1
(completion within 10 weeks)		
Rapid	54	54.5
(completion within 12 weeks)		
Moderate	38.6	39.4
(just within 15 week semester)		

[a] Data were unavailable for two students who had stopped attending before the anticipated pace selection sheets were completed.

the actual number of weeks to complete the course and the anticipated number of weeks.

Table 3 shows the variability in attendance at optional lecture/ discussion sessions. This variable is measured as a percentage of appropriate lectures attended. (A lecture was no longer applicable if a more rapidly moving student had already completed the unit being discussed.)

Table 4 shows the variability in optional extra work students elected to do in preparation for unit tests. This variable is measured in the number of units out of a possible six for which extra work was done.

Table 2

Accuracy of Students' Selection of an
Anticipated Instructional Pace (N = 82[a])

Accuracy of Pace Selection	Frequency	Percent
Below number of weeks anticipated (minus 2 or more weeks)	13	15.8
Same as number of weeks anticipated (within 1½ weeks)	25	30.5
Above number of weeks anticipated (plus 2 or more weeks)	44	53.7

Mean	Standard Deviation	Range
1.15	2.37	-4.5 to 5.5

[a] The 19 students who did not complete the course were excluded.

Table 3

Percentage of Optional Lecture/Discussion Sessions Attended (N = 90[a])

Mean	Standard Deviation	Range
56.3	33.1	0-100

[a] The 11 students who dropped out within the first three weeks are excluded.

Table 4

Number of Units for Which Students Elected to Do
Optional Extra Work (N = 90[a])

Mean	Standard Deviation	Range
2.48	2.71	0-6

[a] The 11 students who dropped out within the first three weeks are
excluded.)

Table 5 shows the variability in the number of unit test trials
students needed to pass each unit test. This variable is measured as
the average number of test trials per unit.

Table 5

Students' Average Number of Test Trials
Per Instructional Unit (N = 90[a])

Mean	Standard Deviation	Range
1.354	.303	1.0 to 2.5

[a] The 11 students who dropped out within the first three weeks are
excluded.

Table 6 shows the variability in attribution of unit test failure
among students. This variable is measured as an average of all of a
student's responses to failed unit tests over the semester. Scores
could range from +1 (internal) to -1 (external).

Table 6

Students' Average Response to Unit Test Failure ($N = 69$[a])

Attribution of Failure Score	Frequency	Percent
Internal	33	47.8
(average Scores between .51 and 1)		
Ambivalent	9	13.1
(average Scores between -.51 to .5)		
External	27	39.1
(average Scores between -.1 to -.5)		

Mean	Standard Deviation	Range
.066	.855	-1 to +1

[a] This number excludes the 11 students who dropped out within the first three weeks and 21 students who did not fail any unit tests.

Table 7 shows the variability in rate of progression through the course units among students. The five rates used to describe the students' progress represent differences in the qualitative aspect of the students' progress.

Table 8 shows a breakdown of means on six criterion variables by rate of progression groups. Examination of this table shows differences among groups on all six variables.

Table 7

Students' Rate of Progression Through the Course Units (N = 101)

Rate of Progression	Frequency	Percent
High	13	12.9
Steady	49	48.5
Delayed-Interval	20	19.8
Below-Standard	8	7.9
Drop-Out	11	10.9

Description and Accuracy of the Predictor Variables

Descriptive information about the four predictor variables is presented in Table 9. From this table, it is apparent that the remedial students examined in this study vary in study habits, study attitudes, trait anxiety, and locus of control as measured by the predictive instruments. A comparison of means of their scores and those of the normative sample for each instrument shows that the students in this study have lower study habit scores, lower study attitudes scores, higher state anxiety scores, and more external locus of control scores.

Table 8

Breakdown of Means on Six Criterion Variables
by Rate of Progression Groups

Rate of Progression Group	Anticipated Pace Selection	Accuracy of Pace Selection	Lecture Attendance	Elected Extra Work	Unit Test Trials	Attribution of Failure
High N = 13	13.92	-1.27	42.15	3.69	1.09	.50 N = 4
Steady N = 49	12.96	1.04	70.71	3.12	1.33	.38 N = 39
Delayed-Interval N = 20	11.45	2.97	42.30	1.15	1.34	-.42 N = 20
Below-Standard N = 8	13.0	--	26.37	0.0	1.91	-.60 N = 6
Drop-Out N = 11	12.67 N = 9					
Entire Sample N = 101	12.76 N = 99	1.15 N = 82	56.33 N = 90	2.49 N = 90	1.35 N = 90	.066 N = 69

Table 9

A Comparison of Means for Predictor Variables
in the Current Study Sample and in
Standardization Samples

	Current Sample		Standardization Sample	
Scale	Mean	Standard Deviation	Mean	Reference
SSHA Study Habits	43.26	16.27	50.5	Brown and Holtzman, 1967
SSHA Study Attitudes	54.48	17.15	65.5	Brown and Holzman, 1967
STAI Trait Anxiety	39.16	8.95	37.3	Spielberger, 1970
Rotter's I-E Scale	9.75	3.52	8.29	Rotter, 1966

The intercorrelations for the predictor variables are presented
in Appendix G. As indicated, there are significant correlations
among all the predictor variables. Correlations range from -.194
between Rotter's I-E Scale and the SSHA study habits scores to .626
between the SSHA study habits and study attitudes scores.

The second question examined in this study asked, "Do the four
predictor variables account for the variability in the academic
behavior of remedial college students?". Multiple regression analyses
were performed to answer this question for six of the criterion

variables--anticipated pace selection, accuracy of pace selection, lecture attendance, elected extra work, unit test trials, and attribution of failure. Table 10 shows the multiple correlations between the four predictor variables and each of these six criterion variables. None of these correlations were significant at the .05 level.

Table 10

Multiple Regression Analysis Using Four Predictor Variables (SSHA Study Habits, SSHA Study Attitudes, STAI Trait Anxiety, Rotter's I-E Scale) and Six Criterion Variables

Criterion Variable	N	Multiple R	R^2	F	Significance
Anticipated Pace Selection	99	.221	.049	1.205	.314
Accuracy of Pace Selection	82	.269	.072	1.501	.210
Lecture Attendance	90	.124	.015	.329	.857
Elected Extra Work	90	.207	.043	.947	.441
Unit Test Trials	90	.238	.057	1.28	.284
Attribution of Failure	69	.216	.047	.785	.539

The seventh criterion variable, rate of progess, was examined through a discriminant analysis procedure. Table 11 shows that the four discriminant functions derived from the predictor variables do not, in combination or individuality, have the power to discriminate among the five rates of progression groups.

Table 11

Canonical Discriminant Functions Derived for the Rate of
Progression Groups from the Four Predictor Variables

Function	Eigenvalue	Canonical Correlation	After Function	Wilks' Lambda	Chi-Square	Degrees of Freedom	Significance
			0	0.805	20.66	16	0.192
1	0.207	0.414	1	0.973	2.65	16	0.976
2	0.016	0.128	2	0.989	1.083	4	0.897
3	0.010	0.102	3	0.999	.9006	1	0.764
4	0.001	0.031					

Appendix H does show that there are two statistically significant simple correlations among the predictor and criterion variables. The correlation between SSHA study habits and accuracy of pace selection is -.225, p = .05; the correlation between SSHA study attitudes and rate of progression is -.316, p = .001.

Table 12 shows the adequacy of the four discriminant functions derived from the predictor variables in predicting group membership. The four functions were used to classify the 101 original cases in the study to determine what percent could be correctly classified and consequently, to suggest how effective the predictor variables used would be in classifying new cases with unknown membership.

Table 12

Classification of the Original Set of Cases
by the Derived Discriminant Functions

Actual Group	No. of Cases	% of Cases	Predicted Group Membership				
			1	2	3	4	5
Group 1 High	13	12.9	0 0.0%	13 100.0%	0 0.0%	0 0.0%	0 0.0%
Group 2 Steady	49	48.5	0 0.0%	46 93.9%	0 0.0%	0 0.0%	3 6.1%
Group 3 Delayed Interval	20	19.8	0 0.0%	19 95.0%	0 0.0%	0 0.0%	1 5.0%
Group 4 Below Standard	8	7.9	0 0.0%	7 87.5%	0 0.0%	0 0.0%	1 12.5%
Group 5 Drop Out	11	10.9	0 0.0%	7 63.6%	1 9.1%	0 0.0%	3 27.3%

The actual group membership is boxed for each predicted group membership column in order to show the accuracy of the predicted group placement for each rate of progression group. Accuracy varies from 0.0 to 93.9 percent. The overall percent of original cases correctly classified is 48.51 percent.

Summary

Two research questions were asked in this study. First, to what extent do students vary in their academic behavior? The analyses of data through frequencies and/or means and standard deviations show that the remedial students in this study varied extensively on all seven criterion variables.

The second question was, "Can four predictor variables account for this variability? Multiple regression analyses performed on six criterion variables and a discriminant analysis performed on the seventh demonstrated that none of the predictor variables could significantly account for this variability.

CHAPTER FIVE

DISCUSSION

Summary of the Study

This study examined and documented variability in the academic behavior of remedial college students. These behaviors included anticipated pace selection, accuracy of pace selection, rate of progression, lecture attendance, elected extra work, number of unit test trials, and attribution of test failure. In addition, the relationship of four predictive measures to these behaviors was investigated. The measures used included the study habits and study attitudes subtests of the Survey of Study Habits and Attitudes, the trait anxiety subscale of the State-Trait Anxiety Scale, and Rotter's I-E Scale.

One hundred and one university freshmen participated in the study. They had scored between the 11th and 28th percentiles on the comprehension subtest of the Nelson-Denny reading test and had consequently been randomly assigned to sections of a three-credit remedial reading course. During the first week of class, they were administered the predictive measures and oriented to the modified PSI course structure. They then proceeded through the seven-unit reading course at their own pace.

Throughout the semester, the course instructors recorded extensive data about the students' academic behavior. From these data, the seven criterion variables were derived. These variables were first analyzed through frequency tables, means and standard

deviations to determine the extent of variation among students. Differences were found on all seven variables. Next, multiple regression analyses were performed on six of the variables and a discriminant analysis was done on the seventh, rate of progression. This was done to determine if the variation among students on these variables could be predicted from the four predictor variables. Differences among students were not accounted for by any combination of these predictor variables.

Discussion of the Findings

Statistical analyses demonstrated that the remedial students in this study varied in all the academic behaviors examined. They anticipated three different paces at which they would proceed through the remedial reading course and they varied in the accuracy of those predictions. Some finished as much as four weeks ahead of schedule; others finished more than five weeks behind schedule. They attended from none to all seven of the unit lectures. Some students did extra work in preparation for unit tests; others did not. Twenty percent of the students needed only one trial per unit test; almost the same percentage needed an average of nearly two trials per test. Finally, some students attributed their failure on unit tests to sources outside themselves--other students, the test environment, the test's construction. Other students assumed full responsibility themselves-- they were too tired, unprepared, distracted by other concerns.

The students also varied in their overall rate of progression. Thirteen percent proceeded at a high rate; these students completed the course at least three weeks before the end of the semester. The majority--48 percent--proceeded at a steady rate. They worked through the course units at an even pace, finishing just within the 15-week semester. Twenty percent, those in the delayed-interval group, experienced a significant delay of at least three weeks (and as much as seven weeks) before attempting their first unit test. They then worked at a very rapid rate in order to complete the course. Eight percent, those in the below-standard group, attended classes sporadically throughout the semester, but did not complete the seven course units. They varied in completion of units from zero to four. Finally, 11 percent dropped out of the course within the first three weeks of school without official notice or approval.

Further examination of the students in the study according to their rate of progression groups shows substantial differentiation among groups on the other criterion variables. Four rather distinct academic profiles emerge.

Students in the high rate of progression group worked at a consistently rapid rate finishing at least three weeks before the end of the semester. Interestingly, they were the most conservative in their anticipated pace selection and, as might be predicted, were the only group to finish before anticipated. They elected to attend less than half of the lectures (42 percent), but did the elected additional work more often than any other group. They required the lowest number

of test trials and the few students who did fail tests more often attributed those failures to themselves rather than to outside sources. They demonstrated an accurate self-assessment of their needs and appeared to thrive on their independence and the challenge of finishing ahead of schedule. Their behavior suggested that they were neither anxious nor passive. They forged ahead, electing to do additional work in preparation for tests but often electing not to attend lectures which were of a supplemental nature.

Students in the steady rate of progression group were consistent in most of their academic behavior. Among all groups, they fell in the middle on their anticipated pace selection. They came closest to meeting that anticipated pace. They attended the greatest number of lectures (71 percent). They, much like the students in the high rate group, seemed to have a sound idea of their own capabilities and limitations. They were conservative in their approach, taking advantage of most of the opportunities for reinforcement including high lecture attendance and a reasonable percentage of additional work elected.

Students in the delayed-interval group anticipated proceeding through the course at the most rapid pace. In actuality, they were the least accurate in their predictions, finishing the course just within the 15-week semester and more than four weeks behind the students in the high group. They elected to do extra work for only an average of 1.15 units. They appeared to be anxious about attempting unit tests. They procrastinated for at least three and as much as

seven weeks before they took their first, independent unit test. When asked why they had failed tests, these students tended to assign responsibility for failed tests to external sources more than internal.

The students in the below-standard group appear most passive and inconsistent in their behavior. The eight students in this group only attempted from zero to four of the unit tests out of the seven required. Yet, they continued to attend class sporadically until the end of the semester. They attended only 25 percent of the lectures, never elected to do extra work in preparation for unit tests, took almost two trials to pass each unit test, and attributed their failures to outside factors most of the time.

Eleven students in the drop-out group anticipated proceeding at a very rapid rate; only those in the delayed-interval group anticipated completing the course more quickly. These 11 students did not attempt any unit tests and had stopped attending within the first three weeks of the semester. These students remain much of a mystery. Their abbreviated participation precludes any educated speculation on their academic personality.

This variability in students' academic behavior, found in both the individual criterion variables and in the clusters of variables by rate of progression groups, suggests that both the students profiled by Pat Cross (1971) and by Martha Maxwell (1979) are present in the current study's population. According to Cross, the major obstacle for "the new students" is their passivity; their quickness to quit

trying; their refusal to take responsibility for their own learning. These students that Pat Cross describes are much like the below-standard group students in the current study. On the average, these students required almost two trials per unit test and yet never elected to do the extra work which was specifically designed as preparation for the test. They attended only 1/4 of the lectures which were intended to amplify the text. Finally, these students most often attributed their test failures to outside influences. It is important to note that these students continued to attend classes late into the semester with no visible understanding that they could not possibly complete the required work within the time remaining.

The majority of the students in this study, however, more clearly resembled those characterized by Martha Maxwell as "misprepared." These are students, according to her, who were in high schools where they had been rewarded as much, if not more, for their good student behavior rather than for their skills acquisition. Student behavior in the steady and high rate of progression groups resembles this profile. These students, though obviously skills deficient, appear to have understood clearly what they needed to do in order to complete the course. Those students in the high group, for example, attended less than half of the lectures; their test performance, however, suggests that they were quite successful on their first test trial and in no need of lectures designed to amplify the text. Those students in the steady group were not as successful on their first test trials and elected to attend 70 percent of the lectures given.

Both groups tended to assume responsibility for those unit tests that they did fail.

These findings, which suggest not only differences but patterns of differences in the academic behavior of remedial college students, prompt reiteration of the second question in this study: Can these differences in students' academic behavior be predicted? Unfortunately, the predictive instruments utilized in this study did not, in combination, account for this variability.

Examination of the intercorrelations among the predictor variables (Appendix G) shows that the instruments used have strong, significant relationships. Good study habits as measured by the SSHA correlate with good study attitudes. Higher trait anxiety as measured by the STAI suggests lower study habits and attitudes, and a tendency to place responsibility for one's academic fate on outside sources. Lower trait anxiety appears to correspond to better study habits and attitudes, and assumption of academic responsibility for oneselves. Such relationships could, theoretically, be expected based on a review of the related research. Such relationships might also be expected to demonstrate themselves in the actual academic behavior of remedial students observed and documented in this study. Unfortunately, despite these strong intercorrelations, no combination of predictors could account for the variability in these students' actual behavior. Perhaps a closer examination of the academic behaviors being observed and the method of recording these behaviors needs to be made.

Further analysis of the correlation of specific predictor variables with specific criterion variables indicates two significant relationships (Appendix H). There was a significant relationship relationship between the study habits subtest of the SSHA and accuracy of pace selection (-.225); those who finished in fewer weeks than anticipated received higher scores on the study habits scale. A second significant relationship was found between the study attitudes of the SSHA and rate of progression (.316); those students who had positive attitudes toward teachers and the educational enterprise were more often in the high and steady rate of progression groups.

Although these two correlations are statistically significant, they do not suggest any practical predictive application. The failure of any combination of predictor variables to account for variation in remedial students' academic behaviors nevertheless remains the major disappointment in this study.

Implications for Further Research

One area of further research which seems indicated is a follow-up investigation to see how remedial students in this study have proceeded in the university setting. It would be of interest to see if students' academic performance (as measured by GPA and attrition, for example) could be distinguished by the rate of progression groups. It would also be helpful to see if, for this remedial population, the predictive instruments are more successful in predicting exit performance (as measured by GPA and credits earned). Most of the

research which has demonstrated significant correlations using these instruments has considered these long-term measures of performance.

A closer examination of the predictive instruments themselves might also be useful. Variation in remedial students' academic behavior was demonstrated both by overall, and perhaps more interestingly, rate of progression group analyses. Unfortunately, those differences were not reflected by the instruments used. The significant correlations between the Survey of Study Habits and Attitudes and two academic behavior variables suggest that this is an instrument that may warrant further consideration as a predictor variable. This test is 20 years old and it may be that some questions are less applicable in 1985 than in 1965. Perhaps a closer examination of the four subscales--delay avoidance, work methods, teacher approval, and educational acceptance--might provide a combination of scales that would be even more predictive and useful.

Further examination and possible modification of Rotter's I-E Scale may also make this instrument more useful. This test was first published in 1966, and although it continues to be a popular measure for research, it may be less discriminating than it once was or has been purported to be. Arthur Levine (1980) has suggested that today's college students are very optimistic about their own futures but rather pessimistic about the future of the country. This is in contrast to students in the 1960's who were optimistic about both. This change in perspective may tend to make the I-E Scale less discriminating. Five of the 23 items on this test are of a political

nature, measuring the individual's sense of power vs. powerlessness in government affairs. Further analysis of the items on this test may show that the deletion of these five items can make the I-E Scale a more predictive measure.

Another area for investigation may be the effect of a PSI course on the academic self-perceptions of remedial students. The mean scores for these students on the predictor variables suggest that although many of them were successful in the PSI reading course, these students had test scores lower than the norming populations. The remedial students in this study were more anxious and more externally located. They also evaluated their study habits less favorably and felt less positive about their relationship with teachers. It would be useful to investigate whether or not a PSI course could improve the academic self-perceptions as well as the academic performance of remedial students.

Implications for Current Remedial Programs

Although there was no combination of predictor instruments that could accurately predict the academic behavior of remedial students,

the results of this study do, nevertheless, have some implications for current programs.

The examination of students by rate of progression groups makes a contribution to the debate over the appropriateness of independent, self-paced instructional methods for remedial students. Over 60 percent of the students who participated in this study, those in the

high and steady rate of progression groups, appeared to have adapted quite well to the independence of the PSI course structure. They seemed to choose the combination of optional course components such as lecture attendance and extra practice which worked most effectively for them.

PSI did not, however, appear to be a good choice for the 20 percent of the students who were in the below-standard and drop-out groups. It also appeared to be a questionable choice for those in the delayed-interval group. Many of these 20 students completed all seven units only because of a "catch-up" week at the end of the semester. These students took an average of 2.3 unit tests during the final week.

This, however, may be stating the case too strongly, particularly for those in the delayed-interval group. Because of the experimental nature of the course, students were given no warnings about their procrastination. They were not coached in any fashion. In a regular course environment where the teacher is permitted more freedom to direct individual students, many of these students might have avoided the pitfalls of absolute autonomy. One way in which the course structure might be altered to better ensure the completion of all units by all students would be to specify a final date for each unit test. In such a format, students who wished to work at a rapid rate would be free to do so, but all students would be required to take each unit test by a specified final testing date.

One variable, anticipated pace selection, may be of help in identifying students who are likely to fall into the delayed-interval, below-standard, or drop-out groups. Although this variable was not

intended as a predictor in the present study, it would appear that there is some relationship between anticipated pace and actual rate of progression through the course. All the students who anticipated proceeding at an accelerated pace fell into the three less effective rates--delayed-interval, below-standard, and drop-out. Although this represents a small percentage of the sample, this finding nevertheless suggests that students who anticipate proceeding at this pace need to be monitored closely and perhaps counseled about the unlikelihood of finishing at such a rate.

The findings of the study also indicate clearly that many remedial students are academically responsible. Such students may be useful in assisting less responsible students in the remedial task. A promising format which taps this resource is the Cooperative Learning Approach (Slavin, 1981). This approach is grounded in Tinto's (1975) model of attrition which asserts that social integration is as crucial a part of student persistence as academic ability. In this approach students are divided into work groups, perhaps heterogeneously by pace selection. Each student is responsible for the group's performance as well as for his own. Such a learning format might keep the drop-outs in class longer because of the social affiliation. It might keep the delayed-interval and below-standard students on task. It certainly warrants further investigation.

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APPENDIX A

Board of Trustees of the State Colleges and Universities

Admission Requirements and Academic Standards

1. The Board of Trustees requires, as a minimum admission standard for all full-time and part-time entering freshmen who have graduated from high school within five years of admission, a high school average of C or better. The Board, however, encourages each institution to adopt standards above the minimum level.

2. Each institution will develop predictive measures of probable academic success and identify any additional admissions criteria.

3. In addition to those students admitted under 1 and 2 above, each institution may admit up to 15 percent of its entering freshman class, students whose high school average was less than C but who show potential for success in post-secondary education. All students admitted under this program must be provided with appropriate academic and other support services.

4. All entering freshmen will be administered diagnostic placement tests in reading, writing, and mathematics to determine their strengths and weaknesses.

   a. All students earning below a predetermined standard on these examinations will be required to participate in remedial programs designed to eliminate deficiencies in basic skills.

      1. These students will be administered posttests to determine if they have reached the established standard.

      2. Students who fail to meet the standard within two semesters and a summer session will not be retained at the institution.

   b. Students who exhibit a weakness in the basic skills area but are not in need of full remedial programs will be given a prescribed program to be completed prior to admission to junior status.

   c. Students who earn above a predetermined score at the upper end of the scale, e.g., the 95th percentile, shall be encouraged and enabled to undertake a program commensurate with their measured abilities.

5. Students who have earned fewer than 25 credit hours and desire to transfer to State Universities and Colleges, will be admitted under the conditions set down in Section 4 in accordance with the Maryland Student Transfer Policies, which require equal treatment of native and transfer students.

6. In order to attain junior status (56 credit hours) a student must have earned a grade point average of C or better. Additional progression standards which are in compliance with Board guidelines shall be established by the institution.

7. Admission to some designated programs may require higher standards or be limited by the opportunities available to complete a clinical or other requirement of the major program.

    a. The institutional standards shall be approved by the Board of Trustees and reviewed by them on an annual basis.

    b. Such standards shall be published in the institution's catalog.

8. These standards shall take effect with the entering class of Fall 1980.

(Underlinings are the study director's)

APPENDIX B

Course Syllabus

DEVELOPMENTAL READING II

Instructor:

Office: The Learning Center
         Hawkins Hall, Rooms 208-210

Phone: 321-2643

Texts: Miller. Reading Faster and Understanding More: Book 3
         Williston. Understanding the Main Idea: Advanced Level
                     Making an Inference: Advanced Level
                     American Heritage Dictionary

   This is a course through which you may move at your own pace. You
will not be held back by other students or forced to go ahead until you
are ready. You may meet all the course requirements before the end of
the semester. How fast you go is up to you.

   The work in this course is divided into 8 units. The first is an
introductory unit designed to give you some familiarity with your text
and the course structure. This unit will be done as a class.
Attendance is required.

   The remaining 7 units will cover skill work designed to increase
your reading effectiveness. These units will come in a definite
sequence and must be done in order. You must show your mastery of each
unit by completing a prescribed number of assignments and by passing the
unit test with a grade of 80% or better.

   A good share of your work in this course may be done in your
scheduled classroom period, on those days when no lecture and discussion
sessions are taking place. Your class will, in essence, be used as a
laboratory for doing assignments and taking unit tests. You may choose
whether or when to attend the lab sessions; attendance is not required.

   Lecture and discussion sessions will be provided to introduce each
unit. The lectures are designed to amplify the text presentation of
each topic. They will not present information not given in the text;
they are intended to clarify the information given. You need not attend
these sessions if you do not wish.

   You will receive a grade of S (satisfactory) or U (unsatisfactory)
in this course. The requirement for the grade of S is the completion of
all course assignments and a score of 80% or above on all unit tests.

COURSE OF STUDY

Unit One: Introduction to the Course

    September 8:   The Process of Reading. Miller, pp. 390-399.
                 Assignment: Miller, Preface and Introduction

    September 10: Comprehension and Rate Pretest

    13 & 15: Miller, Lesson 1.

    17: Word Comprehension Quz; Instructional Pace Selection

Unit Two: Dictionary Usage

    September 20: Lecture and Discussion Session
                 Assignments: How to Use the Dictionary Handout
                             Miller, Homework Assign. 1
                             Miller, Homework Assign. 2

Unit Three: Main Idea

    September 27: Lecture and Discussion Session
                 Assignments: Miller, Lessons 2 and 3
                             Understanding the Main Idea,
                             odd-numbered exercises

Unit Four: Details

    October 11: Lecture and Discussion Session
                 Assignments: Miller, Lessons 4 and 5
                             Details handout

Unit Five: Scanning

    October 25: Lecture and Discussion Session
                 Assignment: Miller, Lesson 6

Unit Six: SQ3R

    November 1: Lecture and Discussion Session
                 Assignment: Miller, Lesson 7

Unit Seven: Skimming

    November 8: Lecture and Discussion Session
                 Assignments: Miller, Lesson 8, pp. 216-218.
                             Miller, Lesson 9

Unit Eight: Inference

    November 15: Lecture and Discussion Session
                 Assignments: Miller, Lessons 10 and 11
                             Making An Inference, odd-
                             numbered exercises

APPENDIX C

Instructor's Assignment and Attendance Sheet

Name of Student: _____

DEVELOPMENTAL READING II

	Assignments and Tests		Attendance
Introduction	9/1		9/1
Research Testing	9/3		9/3
Process of Reading	9/8		9/8
Pretest	9/10		9/10
Lesson #1, Miller	9/13		9/13
			9/15
Words in Context Quiz	9/17		9/17
Unit II - Dictionary			
Lecture			9/20
How to Use the Dictionary, Handout			9/22
Homework Assignment #1, Miller, pp. 323-325			9/24
Homework Assignment #2, Miller, pp. 327-329			
Words in Context			
Unit Test			
Supplemental Work			
Retesting			
Unit III - Main Idea			
Lecture			9/27
Lesson #2, Miller			9/29
Lesson #3, Miller			10/1
Jamestown, "Understanding the Main Idea; odd-numbered paragraphs			10/4
			10/6
			10/8
Words in Context			
Unit Test			
Supplemental Work			
Retesting			
	Date	Grade	

	Assignments and Tests		Attendance
Unit IV - Details			
Lecture			10/11
Details Handout			10/13
Lesson #4, Miller			10/15
Lesson #5, Miller			10/18
			10/20
			10/22
Words in Context			
Unit Test			
Supplemental Work			
Retesting			
Unit V - Scanning			
Lecture			10/25
Lesson #6, Miller			10/27
			10/29
Words in Context			
Unit Test			
Supplemental Work			
Retesting			
Unit VI - SQ3R			
Lecture			11/1
Lesson #7, Miller			11/3
			11/5
Words in Context			
Unit Test			
Supplemental Work			
Retesting			
Unit VII - Skimming			
Lecture			11/8
Lesson #8, Miller, pp. 216-218			11/10
Lesson #9, Miller			11/12
Words in Context			
Unit Test			
Supplemental Work			
Retesting			

Date   Grade

	Assignments and Tests		Attendance
Unit VIII - Inference			
Lecture			11/15
Lesson #10, Miller			11/17
Lesson #11, Miller			11/19
Making an Inference, odd-numbered			11/22
			11/24
Words in Context			
Unit Test			
Supplemental Work			
Retesting			
Post - Test	12/10		12/10
Nelson - Denny	12/13		12/13
	Date	Grade	

IMPORTANT!   NO UNIT TESTING AFTER 12/8

APPENDIX D

Pace Selection Sheet

Name _____

Section/Instructor _____

DEVELOPMENTAL READING II

Instructional Pace Selection

As stated in your syllabus, this is a course through which you may move at your own pace. You may complete the required 8 units at a rate that is comfortable for you. You must meet all the requirements by the end of the semester, but you may finish before the semester is over.

The lectures in this course have been scheduled according to a moderate pace. If you were to do the assignments and unit test for each unit following the lecture for that unit, you would complete the course just within the 15-week semester.

If you were to complete all the units by November 15, you would be proceeding at a rapid rate. You would have completed the course approximately 3 weeks before the end of the semester.

If you were to complete all the units by November 1, you would be proceeding at an accelerated rate. You would have completed the course approximately 5 weeks before the end of the semester.

After examining the assignments for the course and evaluating the ease or difficulty with which you believe you can complete them, select the instructional pace you think you will follow. You are not bound to this pace. Your selection is designed to give you and your instructor an estimate of your work schedule for the semester.

_____ Moderate (finished at the end of the 15-week semester)

_____ Rapid (finished by November 15th)

_____ Accelerated (finished by November 1st)

APPENDIX E

A Quickie Reference Sheet

DEVELOPMENTAL READING II

Course Structure, Assignments, and Procedures

1. This course is divided into 8 separate units which must be completed sequentially.

2. In order to take a unit test, all assignments must be completed and checked by the instructor. (See record-keeping sheet for assignments.)

3. A student must pass (80% or above) each unit test before proceeding to the next unit. Unit tests will include exercises similar to those which are completed as assignments and which appear in the text.

4. Each unit test will include a vocabulary section. The vocabulary will be drawn from the "words in context" section of the lessons in the text for the unit.

5. The vocabulary worksheet (pronunciation, part of speech, definition) must be completed before taking a unit test.

6. On the vocabulary section of the unit test, you will be required to use the vocabulary words in a sentence which demonstrates your knowledge of the word meaning and usage.

7. Students are not required to attend class, but must complete unit tests during their regularly scheduled class period. The instructor must be notified at least one class session in advance if a student wishes to take a unit test.

8. If a student does not pass (80% or above) a unit test, he/she must do supplemental work and then retake the unit test.

9. During lab sessions, the first 10 minutes of class will be devoted to timing perceptual exercises. The rest of the class period is a self-pacing work session.

10. For lecture and discussion sessions, the instructor will lecture on the topic for the unit being introduced. During the lecture, the instructor will expand on the topic, but no new material will be introduced. Unit tests are developed from assignments and material included in the text.

11. If a student attends a class session (lab or lecture), he/she must stay for the entire class period, and must be on time.

APPENDIX F

Student's Assignment Sheet

DEVELOPMENTAL READING II

	Assignments and Tests	
Introduction	9/1	
Research Testing	9/3	
Process of Reading	9/8	
Pretest	9/10	
Lesson #1, Miller	9/13	
Words in Context Quiz	9/17	
Unit II - Dictionary		
Lecture		
How to Use the Dictionary, Handout		
Homework Assignment #1, Miller, pp. 323-325		
Homework Assignment #2, Miller, pp. 327-329		
Words in Context		
Unit Test		
Supplemental Work		
Retesting		
Unit III - Main Idea		
Lecture		
Lesson #2, Miller		
Lesson #3, Miller		
Jamestown, "Understanding the Main Idea; odd-numbered paragraphs		
Words in Context		
Unit Test		
Supplemental Work		
Retesting		
	Date	Grade

	Assignments and Tests	
Unit IV - Details		
Lecture		
Details Handout		
Lesson #4, Miller		
Lesson #5, Miller		
Words in Context		
Unit Test		
Supplemental Work		
Retesting		
Unit V - Scanning		
Lecture		
Lesson #6, Miller		
Words in Context		
Unit Test		
Supplemental Work		
Retesting		
Unit VI - SQ3R		
Lecture		
Lesson #7, Miller		
Words in Context		
Unit Test		
Supplemental Work		
Retesting		
Unit VII - Skimming		
Lecture		
Lesson #8, Miller, pp. 216-218		
Lesson #9, Miller		
Words in Context		
Unit Test		
Supplemental Work		
Retesting	Date	Grade

	Assignments and Tests	
Unit VIII - Inference		
Lecture		
Lesson #10, Miller		
Lesson #11, Miller		
Making an Inference, odd-numbered		
Words in Context		
Unit Test		
Supplemental Work		
Retesting		
Post - Test	12/10	
Nelson -Denny	12/13	
	Date	Grade

IMPORTANT! NO UNIT TESTING AFTER 12/8.

APPENDIX G

Intercorrelations Between Predictor Variables

	SSHA Study Habits	SSHA Study Attitudes	STAI Trait Anxiety	Rotter's I-E Scale
SSHA Study Habits				
SSHA Study Attitudes	.626**			
STAI Trait Anxiety	-.479**	-.254*		
Rotter's I-E Scale	-.194*	-.327**	.306*	

* p   .05

** p   .001

Correlations Between Predictor and Criterion Variables

	Anticipated Pace Selection	Accuracy of Pace Selection	Lecture Attendance	Elected Extra Work	Unit Test Trials	Attribution of Failure	Rate of Progression
SSHA Study Habits	.098	-.225*	-.082	.132	.020	-.041	-.062
SSHA Study Attitudes	-.088	-.061	-.115	-.040	-.118	-.051	-.316**
STAI Trait Anxiety	-.031	.186	.004	-.058	-.049	-.051	-.070
Rotter's I-E Scale	.001	.077	.049	.034	-.118	-.181	-.000

*p = .05

**p = .001

CURRICULUM VITAE

Name: Ada Karen Blair.

Permanent address: 17 Bideford Court, Baltimore, Maryland, 21234.

Degree and date to be conferred: Ph.D., 1985.

Date of birth: February 19, 1949.

Place of birth: Louisville, Kentucky.

Secondary Education: Edgewood High School, Edgewood, Maryland, 21040.

Collegiate institutions attended	Dates	Degree	Date of Degree
Hood College	1966-1970	B.A.	1970
Towson State University	1971-1973	M.Ed.	1973
University of Maryland	1978-1985	Ph.D.	1985

Major: Human Development

Professional positions held:

September 1978 - present   Director, The Learning Center
Towson State University.

September 1980 - present   Academic Remediation Consultant
St. Mary's Seminary
Baltimore, Maryland.

September 1973 - June 1978   Coordinator of Instructional Programs
The Study Skills Center
Towson State University.

September 1972 - June 1973   Graduate Assistant in Reading
Towson State University.

June - August 1973   Instructor in English as a Second Language
Galata, Greece.

September 1970 - June 1972   Substitute Teacher
Harford County, Maryland.