

THE INFLUENCE OF PROGRAMMED INSTRUCTION UPON THE
ENGLISH PROFICIENCY OF COLLEGE STUDENTS

by

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ABSTRACT

The primary purpose of this study was to determine whether students who studied an English usage programmed text would demonstrate an improvement in their English proficiency when compared with students who did not study the text. Another purpose was to determine whether a difference existed between English proficiency test gain scores of intrinsically motivated students and gain scores of extrinsically motivated students.

The population consisted of all 134 elementary education students who were enrolled in the para-professional quarters at Montana State University during the 1971-1972 school year. The Cooperative English Test, English Expression, Form 1A (hereinafter CET), was administered at the beginning of each of three quarters. Students who scored below the arithmetic mean were considered deficient in English usage. The instrument used to remediate students' English deficiency was English 2200 (Blumenthal, 1964), a programmed course in grammar and usage. The CET was administered to all students at the end of the quarter. The third quarter students were extrinsically motivated: the gain scores influenced the deficient students' grades in their language arts methods course. The first and second quarter students were intrinsically motivated: the gain scores did not influence the students' grades for any course.

When a t test was applied to data from (1) the entire population, (2) winter quarter, and (3) spring quarter, students who studied English 2200 did not have greater gain scores than students who did not study the text. However, when data from fall quarter were analyzed, students who studied English 2200 did have greater gain scores than students who did not study the text. When a t test and an analysis of covariance were applied to the data, no difference was shown to exist between intrinsically motivated learning and extrinsically motivated learning. A non-significant low negative correlation was found between gain scores and number of units studied.

Based upon the review of selected literature and the conclusions of this study, possibilities for further research were presented. In future research, the intrinsic and extrinsic motivation treatments should be concurrent rather than consecutive, and remediation of students' deficiencies should be individualized to a greater degree than it was in this study.

Chapter 1

Introduction

The role of the teacher is influenced by many expectations from children, parents, and society in general. Among other things, a teacher is usually viewed as a model and an authority for children.

Since a teacher is seen as a knowledgeable model, faculty of teacher training institutions have the responsibility to insure that their graduates are equipped with the skills to become excellent models. The teacher-in-training also has the responsibility to develop a level of skill proficiency commensurate with institutional standards. Faculty of teacher training institutions should be able to identify and measure the skills they want their graduates to possess. They should also attempt to determine what method of motivation best promotes the acquisition of the skills.

English proficiency is one of the skills that children, parents, and society in general usually expect teachers to possess. Teachers are expected to exhibit proficiency in the use of spoken and written English during all classroom activities, not only during formal lessons in English.

Realizing the importance of a teacher's English proficiency, certain faculty in the Elementary Education Department at Montana State University examined the effectiveness of a programmed text for

increasing the English proficiency of teacher trainees. Two different methods of motivation, intrinsic and extrinsic, were used. This paper is the report of the procedures and findings from the investigation.

The Problem

Need for the Study

To be able to identify and measure students' English proficiency and to provide effective remediation where necessary are important responsibilities of faculty at every teacher training institution. Realizing this responsibility, faculty members within the Department of Elementary Education at Montana State University were concerned that some of their students were being certified to teach, yet were not proficient in spoken and written English.

This study can be valuable to the faculty in the Department of Elementary Education at Montana State University because it presents the results obtained from an instrument used to measure students' English proficiency. This study also includes data on the effectiveness of an English usage programmed text.

Data comparing intrinsic motivation and extrinsic motivation are presented in this study. If one method produces greater learning, then this study can be significant to faculty who wish to adopt the better method.

Purposes of the Study

The primary purpose of this investigation was to determine whether students who studied an English usage programmed text would demonstrate a difference in their English proficiency when compared with students who did not study the text.

Another purpose of this investigation was to determine whether a difference existed between English proficiency test gain scores of intrinsically motivated students and gain scores of extrinsically motivated students.

The following two problems were pertinent to this study.

1. Is an English usage programmed text an effective means for increasing students' English proficiency?
2. Does learning differ between students motivated intrinsically and students motivated extrinsically?

General Questions to be Answered

This study was conducted to obtain answers to the following questions.

Will students who study an English usage programmed text demonstrate an increase in English proficiency when compared with students who do not study the text?

Will a difference exist between intrinsically motivated learning and extrinsically motivated learning when students are told

by a faculty member of their department that they are deficient in a skill needed for their profession and are advised how they may improve the skill?

Will a positive correlation exist between the amount of the programmed text studied and gain score?

Assumptions

The following assumptions are relevant to this study.

1. Students will perform to the best of their ability on both the pretest and posttest of English proficiency.
2. Students will truthfully report the number of units they completed in the English usage programmed text.

Methodology

This study was an evaluation of an English usage programmed text as a method for improving English proficiency of para-professionals and an evaluation of extrinsic and intrinsic motivation used with the text.

This section contains a brief description of this study's population and procedures.

Population

The population consisted of all 134 elementary education students who were enrolled in the para-professional quarters at

Montana State University during the 1971-1972 school year.

Procedures

To answer the questions posed in this study, an English proficiency test was administered at the beginning of each of three quarters to all students enrolled for para-professional experience. The instrument used to assess skill proficiency was the Cooperative English Test, English Expression, Form 1A (hereinafter CET). Those students identified as deficient in English were advised to study an English usage programmed text. The norms and percentiles provided in CET's manual were not used to determine deficiency for the purposes of this study. Students who scored below the arithmetic mean that their class obtained on CET were considered to be deficient in English usage. The instrument used to remediate students' English deficiency was English 2200 (Blumenthal, 1964), a programmed course in grammar and usage. The students of the first two quarters were intrinsically motivated. The students of the third quarter were extrinsically motivated. The CET was administered to all students at the end of the quarter.

The first question posed in this study asked, "Will students who study an English usage programmed text demonstrate an increase in English proficiency when compared with students who do not study the text?"

In order to answer this question, the CET gain scores of all students of all three quarters were used. The scores were sorted into two groups. One group of scores represented those students who studied English 2200; the other group represented those who did not study the text. In order to determine whether the gain scores obtained by each of the two groups varied significantly, differences between the means were tested at the five per cent level.

The second question posed in this study asked "Will a difference exist between intrinsically motivated learning and extrinsically motivated learning when students are told by a faculty member of their department that they are deficient in a skill needed for their profession and are advised how they may improve the skill?"

In order to answer this question, the gain scores of only those students who were advised to study English 2200 (whether or not they actually studied it) were used. These scores were sorted into two groups. One group of scores represented those students in the first two quarters who were subjected to intrinsic motivation procedures; the other group represented those students in the third quarter who were subjected to extrinsic motivation procedures. In order to determine whether the difference between gain scores obtained by one group varied significantly from gain scores obtained by the other group, a test of significance of the difference between two means and an analysis of covariance were applied to the data.

Significance was tested at the one per cent level of confidence for both the t test and the analysis of covariance.

The third question posed in this study asked, "Will a positive correlation exist between the amount of the programmed text studied and the gain score?"

In order to answer this question, the gain scores of only those students who studied English 2200 were used. Each student's score was paired with the number of units of the text he reportedly had completed. A correlation coefficient was calculated to measure the degree of relationship between gain scores and number of units studied.

Limitations

The following limitations are recognized in this investigation.

1. The population consisted of the students enrolled in the para-professional quarter of the undergraduate program for elementary education at Montana State University.
2. The study was conducted during the three quarters of the 1971-1972 school year.

Definition of Terms

The following terms are defined as used in this paper. Subsequent terms will be defined in the text of this paper as they

are used in the cited source.

Deficiency. Students who scored below the arithmetic mean that their class obtained on CET were considered to be deficient in English usage.

Extrinsic motivation. Students considered deficient in English usage were permitted to proceed through English 2200 at their own rate and were encouraged to turn in progress tests for each unit of the text. The gain scores (i.e., scores obtained on the CET) influenced the students' grades in their language arts methods course and were especially influential if the student's grade was on the borderline.

Gain score. A student's gain score is equal to his CET post-test score minus his CET pretest score.

Intrinsic motivation. Faculty advised students deficient in English usage to study English 2200. No progress (unit) tests were made available. Although the students were required to take a post-test (the CET), the scores did not influence their grades for any course.

Summary

The levels of skills possessed by a graduate of a teacher training institution reflect not only upon the graduate, but also

upon the institution. It behooves members of the institution to be able to identify and measure the skills they want their graduates to possess and to determine which method of motivation best promotes the acquisition of those skills. Among the skills that school children, parents, and society in general expect teachers to possess is English proficiency. This investigation was concerned with identifying students who were below a minimum level of English proficiency and with determining whether their studying an English usage programmed text would influence their proficiency. This investigation was also concerned with determining whether a difference occurred between intrinsically motivated learning and extrinsically motivated learning.

Organization of the Paper

In this introductory chapter, a brief statement has been made regarding the problem, the importance of the study, and the scope.

Chapter 2 presents a review of the literature pertinent to this study.

Chapter 3 describes the design for this study.

Chapter 4 reports the findings.

Chapter 5 contains a summary of the study with conclusions and recommendations drawn from the findings and the literature.

Chapter 2

Review of Selected Literature

This chapter presents a review of selected literature concerned with the three major aspects of this study: competency based education, programmed instruction, and intrinsic/extrinsic motivation. The first three sections of this chapter include a review of the literature related to each of the three aspects listed above. The last section of this chapter contains a summary of the literature reviewed.

Competency Based Instruction

This section of Chapter 2 is divided into two parts. The first part contains a definition and a discussion of competency based education. In the second part, some of the criticisms of competency based education are stated.

Definition and Discussion of Competency Based Education

Competency based education (hereinafter CBE) has been defined in various ways. In its simplest form, it means that the learner must be able to demonstrate mastery or attainment of specified criteria (Palardy & Eisele, 1972, p. 545). Elam (1972, p. 3) reported that some authorities objected to that term because it tended to focus attention on only one criterion of CBE, the performance criterion.

Elam (1972, p. 3) stated that three aspects of CBE could be differentiated: knowledge criteria (cognitive understanding), performance criteria (behavior), and product criteria (results of a project or undertaking). Palardy and Eisele (1972, p. 545) stated that the criteria of attainment may include areas in the cognitive, affective, and psychomotor domains and may encompass all phases of education--from preprimary to graduate school.

Glasser (1964, pp. 68-76) discussed CBE (without specifically using that term) in his paper "Psychology and Instructional Technology." Glasser's model of the instructional system had five components: (1) instructional goals, objectives; (2) entering behavior; (3) instructional procedures; (4) performance assessment; and (5) research and development. Glasser's five-part model was used in the following discussion of CBE.

Instructional goals. One of the major assumptions underlying CBE is that at its base are detailed descriptions of the behavioral outcomes expected of the learner. Behavioral outcomes may be called behavioral objectives, performance goals, operational objectives, and instructional objectives (Palardy & Eisele, 1972, p. 545). Whatever they are called, they must meet three criteria listed below:

1. The behavior itself must be identified.
2. The conditions under which the behavior is to occur must be defined.

3. The criterion of acceptable performance must be specified (Mager, 1962).

Entering behavior. Subsumed under this component of the model are two stages: (1) diagnosis and (2) pretesting.

In diagnosis, a determination is made whether the student has the prerequisite competencies to engage in the work required for a particular learning experience (also called a "module"). For example, if the topic of the module is long division, the student must demonstrate that he can add, subtract, and multiply. If he lacks one of the prerequisite skills, he is "recycled" into other learning modules (Palardy & Eisele, 1972, p. 546).

The second stage is one of pretesting. Assuming that the student has the prerequisite skills for the module, a pretest will reveal at what point in the module the learner should enter the module. If he has none of the behaviors specified for the module, he enters at the beginning. If he has some of the behaviors, he enters the module at the point commensurate with his level of competence (Palardy & Eisele, 1972, p. 547).

Instructional procedures. The third component of CBE involves the actual instruction or learning experience. All activities are designed to help lead the student toward mastery of the module's objectives, however, each activity is structured differently in an

attempt to accommodate various styles of learning (Palardy & Eisele, 1972, p. 547).

Performance assessment. The fourth component is the posttest. If the results are satisfactory, the student begins work on another module. If the results are not satisfactory, the student selects (or is helped to select) learning activities designed to remedy his deficiencies (Palardy & Eisele, 1972, p. 547).

Research and development. CBE should be so organized and managed that it provides for its own continuous evaluation and revision. This is a critical area because a program may appear to be effective and efficient, but not actually be producing the desired results (Palardy & Eisele, 1972, p. 547).

Palardy and Eisele (1972) posed and answered three questions: "Can CBE be done (p. 548)?" "Is it being done (p. 548)?" and "Should it be done (p. 548)?" The answer to the first question was yes, CBE can be done--and it can be done more efficiently than and as economically as most of today's education programs. The answer to the second question was both yes and no. CBE was being field tested on a small scale; CBE did not constitute the total program of any school at the time the article was written. The answer to the third question was also both yes and no. CBE held great promise as a systematic framework for teaching and learning certain items and skills; however, a question

remained as to whether CBE can come to grips with many aspects of the social, emotional, and high-order cognitive levels of students.

Several authors have addressed themselves to possible shortcomings of CBE.

Criticisms of Competency Based Instruction

CBE has its critics whose concerns are basically a belief that CBE is mechanistic; that it is based upon an engineering model. Consequently, the critics feel that CBE is inappropriate for an area whose goal is to mold better human beings, not to build better submarines, aircraft, or bridges (Atkin, 1968; Macdonald & Wolfson, 1970).

A major criticism of CBE revolves around the first component, instructional goals. One problem lies in the confusion over who has the responsibility for writing the objectives. Should the teacher write his own objectives or should he rely on objectives preestablished by experts? The teacher seldom has time to do the former and he jeopardizes the unique aspirations of his class if he does the latter (Palardy & Eisele, 1972, p. 546).

Another criticism is stated by Atkin (1968). If all outcomes are couched in behavioral terms, then:

. . . it is inevitable that, over time, the curriculum will tend to emphasize those elements which have been thus identified. Important outcomes which are detected only with great difficulty and which are translated only rarely into behavioral terms tend to atrophy. They disappear from the curriculum (p. 28)

Behavior objectives are easier to write for some areas than for other areas, therefore, Atkin's criticism can not be dismissed lightly.

Macdonald and Wolfson (1970) voiced several criticisms of behavioral objectives. Among the criticisms were: (1) that the concept of "behavior" is no longer a useful idea in education; (2) that behavioral objectives seem to promote training instead of learning; and (3) that specifying objectives tends to foster an inflexible approach to learning situations.

Concept of behavior. Macdonald and Wolfson (1970, pp. 120-122) believed that at one time the concept of behavior was a useful idea in education. "Behavior had a wholeness to it and suggested meaningful transfer to life situations (p. 121)." However, they felt that the broad definition had faded into the background in order to satisfy cultural pressures for evaluation, "The behavior objective approach has scaled down behavior to 'pieces' of subject matter. Whether these add up to anything in a broader context is a question that is usually ignored (p. 121)."

Learning. Those who advocated the use of behavioral objectives seemed to assume that the processes and products of learning were definable. Macdonald and Wolfson (1970, pp. 122-123) believed that the kind of learning that had been emphasized by most of the people who urged the use of behavioral objectives was more like training.

Flexibility. Another important limitation of behavioral objectives given by Macdonald and Wolfson (1970) is that "when we focus on specified objectives, we are likely to overlook opportunities to move in unexpected but possibly more exciting or meaningful directions (pp. 122-123)." Furthermore, behavioral objectives focus on the teacher's view rather than the child's. "Objectives specify what the teacher wants the child to do (p. 122)."

The design of this study was related to CBE in that: (1) a competency was identified (English proficiency); (2) a pretest was administered (CET); (3) a course of remediation (English 2200) was prescribed for those with low pretest scores; (4) a posttest was administered to measure the gains. The fifth component, research and development, specified continuous evaluation and revision. Since this study was a research study, and not intended as an on-going program, the fifth component was not included in the design. Another deviation from the CBE model was that a period of time--a quarter--was the framework within which this study was conducted. In a "pure" CBE design, time would have been a more flexible factor.

Programmed Instruction

This section of Chapter 2 is composed of three parts. The first part contains a definition of programmed instruction and a comparison of teaching machines with programmed textbooks. In the

second part, the historical development of programmed instruction is traced from ancient times through Pressey, Skinner, and Crowder. In the third part is a summary of selected literature concerning programmed instruction research.

What is Programmed Instruction?

General definition. Programmed instruction is the kind of learning experience in which a "program" takes the place of a teacher or tutor for the student. The program leads the student through a set of specified behaviors designed and sequenced to make it more probable that he will behave in a desired way in the future, i.e., that he will learn what the program was designed to teach (Schramm, 1962, p. 1). Programs are found in several forms, e.g., books, strips of paper, microfilmed slides, and auditory material.

Three types of devices. Porter (1958) developed a system of classifying teaching devices. The three classes of teaching devices distinguished by Porter are (1) stimulus devices, (2) response devices, and (3) stimulus-response devices.

Porter did not distinguish between programmed textbooks and teaching machines in his three-part classification. However, several authors have written about the similarities and differences between programmed texts and teaching machines.

Programmed textbooks of teaching machines. Fry (1963, pp. 6-7)

pointed out that if a teacher led her class through a particular problem one step at a time, explaining each step as it arose and questioning the class after each step, something very close to programmed learning would take place. The teacher would be presenting a "programmed" lecture. Most programs, however, are in forms that do not require a teacher. Originally, programs were designed for use with teaching machines, but now programs are also in book form.

The concept of the program without the machine was implicit in Shakespeare's line, "The play's the thing." Finn and Perrin (1962, pp. 10-11) stated that the machine existed merely to manipulate the program and it was the program that did the teaching. It was the program from which the student learned. Existing machines were referred to as "mechanical page turners (p. 11)," and by other names which implied that they were superficial, useless, and mere gadgets.

Homme and Glaser (1959) described the programmed textbook:

Its external appearance will not differ from an ordinary textbook, but its interior is quite different. Each page consists of n (usually 4 or 5) panels; the sequence of the panels is not from the top of the page to the bottom as in a conventional textbook; only one panel is "read" or responded to before the student turns it. The student begins with the top panel on page 1, responds to it, confirms his answer by turning the page, and so on, to the end of the unit or chapter, where he is instructed to return to page 1 and respond to the second panel on each page, and so on (p. 103)

The student emits a response rather than choosing one from a series of alternatives. Since Homme and Glaser wrote their description of

programmed textbooks, some programmed texts were published (1) in regular book format and (2) allowing students to choose from a series of alternatives. Programmed texts in regular book format have frames which follow one another from the top of a page to the bottom, rather than from one page to the next. Programmed books in regular book form have an advantage for the student (fewer page-turnings) and an advantage for the author (flexibility of frame size). Programmed books called scrambled books allow students to choose from among alternative answers.

Two types of programmed textbooks have been published: programmed books and scrambled books. The programmed books contain subject material which is linearly programmed, i.e., in a series of sequential steps leading from familiar concepts to new material. The student proceeds from one step to the next and is generally asked to construct a response as opposed to choosing a response. The scrambled books contain material in programmed sequential form, but the students do not necessarily proceed through the pages in consecutive order. By means of alternate choice responses, branching to new or review material is made possible (Cook, 1961, p. 153).

Most authors of the literature reviewed for this study agreed that little distinction needed to be made between programmed textbooks and teaching machines. "The basic idea is the same in either case (Lottich, 1965, p. 51)." However, programmed texts can not prevent

cheating. A student using a programmed text may look ahead for the correct response, or if he is not required to write or record a response in some way, he may turn pages with little attention (Green, 1962, p. 134). Of course, this kind of cheating defeats the purpose of programmed instruction and in the end the student cheats himself. Homme and Glaser (1959, p. 105) alleged that the cheating variable occurred with such infrequency that in an adequately constructed program the danger became of little significance. Still, the teaching machine gives more control over the cheating and nonattention factors, if it is programmed in such a way that it does not advance to a new frame until a response is given.

Historical Development

Ancient. Programmed instruction may be traced far back into history. In ancient Greece, Socrates made attempts at a type of programming in his dialogues. Socrates led his students step by easy step through statements to arrive at a "truth" (Green, 1966, p. 2; Lottich, 1965, p. 41). A statement credited to Quintilian resembles the precepts of programmed instruction:

The individual student must be queried often and rewarded with praise; by arrangement, the student must achieve results quickly without error; the student must discover for himself, and eventually cut the apron strings to the teacher and become a self-reliant learner (Garner, 1966, p. 3).

In 1912, Thorndike published what could be today's guidelines

for programmed instruction. He advocated appropriate use of apparatus and devices in the learning process with the teacher's role being one of humanization and guidance.

Although the basic principles of programmed instruction may be traced as far back as ancient Greece, the question still remains: At what time did programmed instruction begin as a distinct development? Early devices, rather than programs, survive. In 1809, the U. S. Patent Office granted a patent to H. Chard for a device designed to teach reading. In 1866, Halcyon Skinner developed and patented a device to teach spelling. B. F. Skinner called H. Skinner's device the first real teaching machine (Garner, 1966, p. 8). In most of the literature reviewed for this study, however, S. L. Pressey was credited with developing machines that could teach and test. The first published reference to a teaching machine was made by Pressey in a 1926 article in School and Society (Fry, 1963, p. 25).

Pressey. Sidney Pressey, a psychologist, developed a machine between 1915 and 1920 that produced measurable amounts of learning in students. After experimenting and publishing the results, he found little enthusiasm among either educators or psychologists. Skinner (1958, p. 969) attributed the lack of enthusiasm to cultural inertia and an inadequate understanding of principles of learning in the 1920's.

Basically, the type of device developed by Pressey followed the format of the multiple-choice question. The student was presented

with a question and four options. Only one of the options was correct. The student chose an option and the device provided immediate feedback: if the correct answer was chosen, the machine presented the next question. If an incorrect answer was chosen, the student continued responding until he selected the correct answer. Pressey and his students developed three different recording devices: a punch board, a system using chemically treated paper, and an electrical system (Carr, 1959, p. 64).

A significant contribution of Pressey was to demonstrate, by means of his punch board, the effectiveness of giving students immediate knowledge of results (Schramm, 1962). One criticism of the type of device developed by Pressey was that the student must merely recognize the correct answer among a number of options. Another criticism was that although the programs were written in small steps, the steps were not arranged in any hierarchial order (Carr, 1959, p. 64).

Pressey, "the father of the teaching machine (DeCecco, 1964, p. 446)," was critical of simple classical and operant conditioning used in designing materials for human subjects. He believed that the adherence to the Skinnerian concept of reinforcement resulted in programs that did not utilize the scope of cognitive activity of which humans are capable. Pressey contended that man's symbolic and linguistic capacities afford him considerably wider ranges of behavior than were being tapped in programmed instruction (Pressey, 1963).

Skinner. The impetus that was lacking in the 1920's was developed by B. F. Skinner, an experimental psychologist. Skinner was primarily responsible for the current industry and interest in teaching machines. In 1954, in a paper entitled "The Science of Learning and the Art of Teaching," Skinner described the laboratory techniques that reliably produced modifications in the behavior of experimental subjects (Deterline, 1962, p. 11).

Skinner invented a teaching machine. The machine was like Pressey's in that it gave immediate feedback, but it was unlike Pressey's in that the student had to construct rather than merely recognize correct answers to questions (Carr, 1959, p. 64; Deterline, 1962, p. 11).

Skinner used the language of operant conditioning in describing the learning process. He emphasized the use of machines because of the importance of reinforcement. He believed that the human teacher physically could not give all the reinforcement needed. Skinner argued that teachers must resort to machines since the labor required for reinforcement is beyond human capacity (Skinner, 1961; Fry, 1963, p. 19).

The "Skinnerian" form of programming was based upon principles of operant conditioning. Operant conditioning is a process whereby subjects are stimulated to behave toward predetermined goals through a series of small actions and consequent reinforcements (Garner, 1966, p. 9). The Skinnerian form of programming is also called "linear"

programming (which was discussed previously in this chapter). Another type of programming, called "intrinsic" or "branching" is used in scrambled books (described previously in this chapter). Crowder, the third pioneer in the area subsumed by the teaching machine, developed the branching technique of programming (Lottich, 1965, pp. 44-45).

Crowder. In 1955, while developing a method for training electronic engineers in trouble-shooting, Norman A. Crowder became involved in the utilization of programmed learning devices. Crowder's contribution was the scrambled textbook (Lottich, 1965, pp. 44-45).

The scrambled textbook utilized the programming technique of branching. In a linearly programmed textbook, each student follows the program step-by-step. In a branched program, students are exposed to different sets of frames. When a student makes an incorrect response, the program "branches" to another part which has remedial material. In order to keep the superior student interested, the program also provides paths containing enrichment material. Incorrect responses are accompanied by reasons why the wrong choices are impermissible. Correct responses are accompanied by words of praise and additional information. The branching method of programming implies that the responses (correct or incorrect) grow inevitably out of the inherent nature and development of the content. Certain crucial points of content have to be understood before other aspects of the

subject matter is attempted (Garner, 1966, p. 17).

Crowder's program adapts more easily than Pressey's or Skinner's to individual differences among students. Also, in the Pressey and Skinner programs, the learner is constantly informed as to the rightness of his responses, but is never given the reasons for the correctness or incorrectness as he is with the Crowder format (Lottich, 1965, p. 45).

Summary of selected literature concerning programmed instruction research. A considerable amount of research has been done on programmed instruction. The research leaves no doubt that programs do teach. A great deal of learning seems to take place, regardless of the kind of students or the kind of program. Even a bad program was found to be "a pretty good teacher (Schramm, 1962, pp. 11-12)." Programs have been used successfully at all levels of the educational system, at all levels of ability, and to teach a variety of academic subject matter and verbal and manual skills (Schramm, 1962).

Goldstein (1964) stated that research findings indicated that "programmed instruction does teach (p. 223)." Goldstein asked the question, "How does programmed instruction stack up against teaching by the usual methods (p. 223)?" He responded saying that the only answer is, "Which program are you stacking up against which teacher (p. 223)?" He believed that program versus teacher studies were not fruitful since the results are not generalizable to other programs and

other teachers.

Based upon several research findings, Goldstein (1964) stated that the textbook was as effective in presenting programmed instructional materials, and in many cases was more efficient than teaching machines.

After conducting research related to programmed instruction of college English, Rothwell (1962) suggested that all remedial English at the college level could be handled by automation. In addition, Rothwell theorized that an orderliness in sequencing of materials might evolve which would facilitate the establishment of a coherent undergraduate program extending from high school through the senior college level.

Several problems exist which may cause difficulties in utilizing and evaluating programmed instruction. Among the problems are (1) most teachers use programmed material for remedial purposes and (2) the phenomenon of intangibles in learning.

Branson (1964, pp. 78-79) was concerned with teachers' use of programmed material for remedial or enrichment purposes. Most programs were not developed for remedial or enrichment use. The programs should be used for the purposes for which they were designed.

Another problem involved in the evaluation of programmed learning is the intangible by-products of the process. However, the "intangibles" in learning are a phenomenon which occur in any learning

process, not just in programmed learning. For example, a college student who remediates his English to a measurable degree (by programmed text or otherwise) may reap other benefits such as an increase in confidence or a more cheerful attitude. Also, learning in one subject may "spill over" into related fields, bringing either a measure of competence or a substantial reduction in training time needed to acquire the additional skill (Fry, 1963, p. 81).

Intrinsic/Extrinsic Motivation

This section of Chapter 2 is divided into two parts. The first part contains a general statement about motivation. In the second part, intrinsic and extrinsic motivation are defined and discussed.

Motivation

Motivation is an important factor in learning and teaching. Day and Berlyne (1971) pointed out that "intelligence accounts for only about half of the variability in achievement and that the next most potent factor is probably motivation (p. 295)." "Motivation is the very heart of the learning process (Ryan, 1966, p. 62)," yet motivation has not been defined in a universally acceptable manner. Almost every theorist has supplied his own definition; however, motivation generally refers to the "why" of behavior. The term motivation usually identifies one or more of three kinds of factors:

(1) the environmental forces which act upon the organism; (2) the internal feelings, drives, or instincts; and (3) the goals of the behavior (Day & Berlyne, 1971, p. 296).

The term motivation has also been considered to denote an energizing function and a directing function of behavior. Atkinson (1957) wrote that the term motivation encompasses two problems. The first problem was to account for an individual's selection of one path of action among a set of possible alternatives. The second problem was to account for the vigor of the action tendency once it was initiated, and for the tendency to persist for a time in a given direction. Ryan (1966) stated this two-fold concept concisely, "Adequate motivation not only sets in motion the activity which results in learning, but also sustains and directs it (p. 62)." .

In this study, the focus was upon the energizing function of motivation. Specifically, this study dealt with intrinsic motivation (the internal feelings, drives, or instincts) and extrinsic motivation (the environmental forces which act upon the student).

Definition and Discussion of Intrinsic and Extrinsic Motivation

Day and Berlyne (1971) believed that motivation could be both intrinsic or extrinsic to the task at hand.

Intrinsic motivation is derived, not from the teacher, but from the interaction of the task and the pupil. It is intrinsic to the performance of the task (p. 296)

Extrinsic motivation is usually applied by the teacher in the form of physical or social reinforcement (stars, a pleasant remark, good marks on a test, etc.) (pp. 295-296).

Kolensnik (1970) stated that intrinsic motivation referred to "an individual's recognition of the value inherent in the very nature of an activity (p. 320)." The activity is considered a desirable end in itself; the activity is self-rewarding. A person acts because of intrinsic motivation when the motives come directly from within the person and no external pressures or bribes are necessary. In extrinsic motivation, "the reward or the good lies outside the activity itself and has no necessary connection with it (Kolensnik, 1970, p. 320)." When an attempt is made to move a person in a given direction by bringing external influences to bear upon him, that is extrinsic motivation.

Ryan (1966) believed that the most effective type of drive is secured by intrinsic motivation. Intrinsic motivation is evidenced when "the learning carries its own reward [and] interest is within the activity (p. 62)." However, Ryan conceded that learning must often proceed in the absence of intrinsic motivation:

Intellectual immaturity and lack of sensitivity to ultimate consequences and ideals may stand in the way of intrinsic appeal. Extrinsic motivation, however, is so called only because it is external to the learning activity itself; it is not in any sense artificial; it must be built upon the foundation of some existing natural response or tendency; it must be intrinsic to the nature of the individual (p. 62).

Mathis, Cotton, and Sechrest (1970) advocated the use of

intrinsic motivation whenever possible. However, they realized that students would not remain--perhaps not even become--intrinsically interested in conventional subject matter. Mathis, Cotton, and Sechrest proposed three alternatives for teachers:

1. Introduce extrinsic motivations, either positive or negative, to keep the class working toward the academic goals originally established.
2. Maintain the original learning goals but recognize that [students] need guidance as a means of changing their motivation patterns to the point where they want to learn the material prescribed.
3. Sacrifice cognitive goals and let the class pursue only the content it currently finds of interest (p. 434).

The three authors believed that the second alternative is the most desirable choice for a teacher to make when intrinsic motivation is not sufficient. The difference between alternatives two and three is largely one of the teacher's intention. Alternative three implies that the teacher does not care if pupils do not develop a motivation to learn the subject matter. Mathis, Cotton, and Sechrest believed that alternative three is "on the whole, unsatisfactory (p. 435)." The three authors believed that alternative one is often desirable, although potentially dangerous. Like Ryan (1966), they felt that exercising alternative one may encourage children to value recognition rather than accomplishment.

In the section about motivation, the statement was made that motivation had not been defined in a universally acceptable manner. Neither have intrinsic and extrinsic motivation been defined in a

universally acceptable manner. The extrinsic-intrinsic distinction is difficult to maintain (Smith, 1966). "In most learning situations, motivation cannot be categorized so neatly (p. 291)" as either intrinsic or extrinsic (Bigge, 1964).

It is often difficult to distinguish clearly between these two kinds of motivation for, when an individual is eating or learning, probably both intrinsic and extrinsic elements collaborate in the situation (Day & Berlyne, 1971, p. 298).

Another problem in defining and discussing intrinsic and extrinsic motivation is that a situation may be perceived by one person as consisting of intrinsic stimuli while the same situation is perceived by another person as consisting of extrinsic stimuli. Richard deCharms (1968) noted that a person's knowledge of his own motivation implied in the phrase "'feels like an Origin [intrinsic motivation] or Pawn [extrinsic motivation]'" is not a simple perception of a stimulus, but a total experience (p. 352)." DeCharms stated further that a person may have a tendency toward (or predominance of) "Origin or Pawn 'feelings' that may be measured and constitute a personality characteristic (p. 352)."

Summary

This chapter presented a review of selected literature concerned with the three major aspects of this study: competency based education, programmed instruction, and intrinsic/extrinsic motivation. A summary of each topic is presented below.

Competency Based Education

CBE has strong points which appeal to educators. First, time is not a limiting factor; time is basically inconsequential. The emphasis is upon acquisition of skills and not upon completing a certain program within x amount of time (Palardy & Eisele, 1972). Second, the emphasis of CBE is upon exit, not entrance requirements (Elam, 1972). Third, CBE instruction is modularized. Modularization tends to increase "possibilities for self-pacing, individualization, personalization, independent study, and alternative means of instruction (Elam, 1972, p. 4)."

Programmed Instruction

Goldstein (1964) argued that any subject which can be taught can be programmed, if the subject matter can be clearly defined. Goldstein was not saying that programming is necessarily the best medium to use to teach any particular subject matter.

Blyth (1964) was concerned that the power which programmers possess to program any definable behavior might be used to create a "puppet philosophy of education (p. 11)." Other authors, such as Deterline, do not seem to fear the power and control of programmers. Deterline (1964) believed that versatile free minds as a goal of our educational system can only be achieved through a highly disciplined and controlled learning environment. He insisted that the lack of control is more likely to produce "undisciplined slipshod thinkers

than creative unstifled individuals (p. 15)." Deterline (1964) stated that the American educational system needs the greater discipline that programmed instruction can provide to produce men educated to their fullest capacity.

Intrinsic/Extrinsic Motivation

When one designs or reads about a study concerning intrinsic and extrinsic motivation, he should realize (1) that various definitions exist and (2) that individual differences on the part of the students or subjects must be taken into account. A situation that is defined by a teacher or experimenter as consisting of mostly intrinsic motivators may be perceived as consisting of mostly extrinsic motivators by some students, and vice versa. Although neither intrinsic nor extrinsic motivation have been universally defined, several authors have stated operational definitions.

This chapter presented a review of selected literature concerned with the three major aspects of this study: competency based education, programmed instruction, and intrinsic/extrinsic motivation.

Chapter 3 contains a description of this study's population, treatments, instruments, hypotheses, research procedures, and statistical procedures.

Chapter 3

Design for This Study

Faculty members within the Department of Elementary Education at Montana State University were concerned that some of their students were being certified to teach, yet were not proficient in spoken and written English. The motivation for this study was a need to improve the English proficiency of Elementary Education students. First, a standardized test was chosen to measure students' English proficiency; then, an English usage programmed text was chosen as a means of remediation, where necessary.

This study was an evaluation of an English usage programmed text as a method for improving English proficiency of para-professionals and an evaluation of extrinsic and intrinsic motivation used with the text.

Chapter 3 contains a description of the study's population, treatments, instruments, hypotheses, research procedures, and statistical procedures.

Population

The population represented in this study consisted of all 134 elementary education students who were enrolled in the para-professional quarters at Montana State University during the 1971-72 school year. From this population, two groups and eight subgroups were extracted:

Group 1. Group one included the 61 students enrolled in fall, winter, and spring quarters who studied English 2200.

Group 2. Group two included the 73 students enrolled in fall, winter, and spring quarters who did not study English 2200 (whether or not they were advised to do so).

Subgroup 1. Subgroup one included the 30 students enrolled in the fall and winter para-professional quarters who were deficient in English usage and were intrinsically motivated.

Subgroup 2. Subgroup two included the 37 students enrolled in the spring para-professional quarter who were deficient in English usage and were extrinsically motivated.

Subgroup 3. Subgroup three included the 10 students enrolled in the fall para-professional quarter who studied English 2200.

Subgroup 4. Subgroup four included the 12 students enrolled in the winter para-professional quarter who studied English 2200.

Subgroup 5. Subgroup five included the 39 students enrolled in the spring para-professional quarter who studied English 2200.

Subgroup 6. Subgroup six included the 25 students enrolled in the fall para-professional quarter who did not study English 2200.

Subgroup 7. Subgroup seven included the 23 students enrolled in the winter para-professional quarter who did not study English 2200.

Subgroup 8. Subgroup eight included the 25 students enrolled in the spring para-professional quarter who did not study English 2200.

Table 8, page 71 in Appendix A, identifies students within each group or subgroup. Table 9, page 73 in Appendix A, lists the data for each student. Data for each student includes: (1) student number with F, W, or S denoting fall quarter, winter quarter, or spring quarter, respectively; (2) units of English 2200 studied; (3) score on Cooperative English Test pretest; (4) score on Cooperative English Test posttest; and (5) gain score.

Treatments

Students in Groups 1 and 2, when added together, comprise the entire population. Most of the students in Subgroups 1 and 2 were also included in Group 2. Subgroups 3, 4, and 5 added together equal Group 1. Subgroups 6, 7, and 8 added together equal Group 2.

After the pretest at the beginning of each quarter, all students were given letters which: (1) explained the reason for the testing; (2) reported the student's score as being "above average," "average," or "below average;" and (3) suggested to the "below average" student that he purchase and complete English 2200. (Appendix B contains copies of the letters distributed to the students at the beginning of

each quarter.) The "below average" students, those in Subgroups 1 and 2, experienced one of two treatments--intrinsic or extrinsic motivation.

Intrinsic Motivation

The students in Subgroup 1 were intrinsically motivated. Students with low pretest scores were told by a faculty member of their department that their English proficiency was below a minimum standard set by the Department of Elementary Education at Montana State University. They were advised to study English 2200 and were permitted to proceed at their own rate. Students were able to contact faculty members to ask questions or give comments at any time during the quarter. The faculty members did not initiate any contacts or establish any communication lines to facilitate information exchange about students' progress with the text. Although the students were required to take a posttest, the scores did not influence their grades for any course. This treatment was defined as intrinsic motivation.

Extrinsic Motivation

The students in Subgroup 2 were extrinsically motivated. Students with low pretest scores were told by a faculty member of their department that their English proficiency was below a minimum standard set by the Department of Elementary Education at Montana State University. They were advised to study English 2200 and were permitted to proceed at their own rate. For each unit in the programmed text,

a progress test was available. Students were encouraged to turn in progress tests periodically to the faculty members; the tests were scored and returned to the students during their next class period. Although students were not required to study the programmed text, the gain scores (i.e., scores obtained on the Cooperative English Test) did influence the students' grades in their language arts methods course. The difference--positive or negative--was especially influential if the student's grade was on the borderline. This treatment was defined as extrinsic motivation.

Instruments

Two instruments were used in this study. One was the Cooperative English Test, English Expression, Form 1A, used to measure students' English proficiency. The other instrument was English 2200 (Blumenthal, 1964), a programmed course in grammar and usage, used to remediate students' English deficiency.

The CET

The Cooperative English Test, English Expression, Form 1A (CET), is part of a battery of tests published by the Cooperative Test Division, Educational Testing Service, Princeton, New Jersey. (See Appendix C for correspondence from Educational Testing Service concerning CET.) The 1960 revision of CET is divided into two separately-timed sections. The first section, "Effectiveness," is timed for 15

minutes and consists of 30 items; the second section, "Mechanics," is timed for 25 minutes and consists of 60 items. For the first 30 items, students chose the best word, phrase, or clause to complete a sentence. This is the example given for Part I, "Effectiveness:"

As far as his spending of money is concerned, his acquaintances consider him ().

- | | |
|------------|-----------------|
| A. shabby | C. stingy |
| B. ignoble | D. contemptible |

The letter C is "stingy" which is the most suitable answer.

Each of the 60 items in Part II is a three-line sentence; each line is identified by a letter. The sentence might have usage, spelling, punctuation, or capitalization errors in any of the three parts. The student had to mark the letter which identified the line in which an error occurred. The students were instructed to mark 0 on their answer sheet if no errors were in the sentence. These are the examples given for Part II, "Mechanics:"

E When all the marks were
F added together, his standing
G was forth in the class.

Part G of the sentence contains the spelling error "forth." Therefore, the letter G is the answer.

- | |
|------------------------|
| A He had not known |
| B that she lived in |
| C Topeka, Kansas. |

The sentence contains no error.
Therefore, 0 is the answer.

Students recorded all responses on a separate answer sheet for machine scoring.

Since the norms and percentiles provided in CET's manual were not used in this study, the norming procedures for CET will not be described. (English deficiency, as defined in this study, is described in Chapter 1.)

Reliability of CET. The Technical Report of CET reported a reliability of .84. The standard error of measurement was 4.21 in converted-score units. The mean and standard deviation were reported in raw-score units.

Sample of Examinees						
Test	Form	Score	Grade	N	Mean	S.D.
CET	1A	Total	12	522	40.02	12.27

The index of reliability was an alternate-form correlation. The time span between the administrations did not exceed one week. Students in the sample were from several high schools in New Jersey and Pennsylvania.

The evidence reported indicates that CET is a reliable instrument.

Validity of CET. The authors of the Technical Report stressed that content validities of CET were of primary importance since the tests were intended primarily as measures of developed abilities in

reading and language usage. Content validity of CET was insured by relying on well-qualified people to construct the tests.

The CET Technical Report indicated that no tests of predictive validity of the CET 1960 revision had been done.

Scoring CET. Every student's answer sheet was scored by machine. The CET Directions for Administering and Scoring included the following directions for scoring by machine:

1. Scan all answer sheets for improper markings.
2. Set and check the scoring machine.
3. Read and record the scores.

The maximum score possible was 90. The scoring formula was "Score = Rights Only."

English 2200

English 2200 (Blumenthal, 1964), a programmed course in grammar and usage, was published by Harcourt, Brace & World. The book contains 11 units consisting of 78 lessons with a total of 2200 frames. The 11 units deal with basic aspects of the sentence: parts of speech, parts of the sentence, punctuation, and capitalization.

The titles of the 11 units are as follows:

- Unit 1: Words That Make Sentences
- Unit 2: Words That Enrich the Sentence
- Unit 3: Getting Your Verb Forms Right
- Unit 4: Subject and Verb Must Agree in Number
- Unit 5: Using the Right Modifier
- Unit 6: Choosing the Right Pronoun
- Unit 7: Word Groups That Build Up Sentences

- Unit 8: Avoiding Sentence Fragments and Run-ons
- Unit 9: Learning to Punctuate
- Unit 10: Apostrophes and Quotation Marks
- Unit 11: What Words Do We Capitalize?

A test booklet was designed to accompany the text. The booklet included two Mastery Tests--Form A and Form B--for each of the 11 units in the text, two Halfway Tests and two Final Tests.

The two instruments, CET and English 2200, were used to measure students' English proficiency and remediate students' English deficiency, respectively. Data obtained from CET pretests and posttests and from students' self-reports of number of text units studied were analyzed in order to test the hypotheses posed in this study.

Hypotheses

In order to facilitate statistical treatment of the data, the following null hypotheses were formulated:

1. There is no significant difference between the gain scores obtained by students in Group 1 when compared with the gain scores obtained by students in Group 2.
2. There is no correlation between the number of units of English 2200 studied and gain score.
3. There is no significant difference between the gain scores obtained by students in Subgroup 1 when compared with the gain scores obtained by students in Subgroup 2.

4. There is no significant difference between the gain scores obtained by students in Subgroup 3 when compared with the gain scores obtained by students in Subgroup 6.

5. There is no significant difference between the gain scores obtained by students in Subgroup 4 when compared with the gain scores obtained by students in Subgroup 7.

6. There is no significant difference between the gain scores obtained by students in Subgroup 5 when compared with the gain scores obtained by students in Subgroup 8.

7. There is no significant difference between the gain scores obtained by students in Subgroup 1 when compared with the gain scores obtained by students in Subgroup 2 when the two subgroups are statistically equated on the pretest.

Research Procedures

Through consultation with faculty members in the English Department and in the Testing and Counseling Services at Montana State University, the instrument chosen to measure English proficiency was the CET. The CET was administered at the beginning of each of the three quarters during the 1971-72 school year to all students enrolled for para-professional experience.

Through consultation with a faculty member in the English Department at Montana State University, the instrument chosen to

remediate students' English proficiency was English 2200.

Students who scored below the arithmetic mean that their class obtained on the CET were considered to be deficient in English. The deficient students of the first two quarters were intrinsically motivated to study the text. The deficient students of the third quarter were extrinsically motivated to study the text. At the end of each quarter, all students who had been pretested that quarter were required to take the CET (i.e., the pretest and the posttest were identical).

Statistical Procedures

In order to test the seven hypotheses, three different statistical procedures were used:

1. Correlation coefficient from ungrouped data using raw scores,
2. Analysis of covariance, and
3. Test of significance of the difference between two means for independent samples.

The correlation coefficient was applied to the data (gain scores and number of units studied) obtained from students in Subgroup 1. The analysis of covariance was applied to the data (gain scores) obtained from students in Subgroups 1 and 2. The t-test for independent samples was applied to five different sets of data (gain scores):

1. Data obtained from students in Groups 1 and 2.
2. Data obtained from students in Subgroups 1 and 2.
3. Data obtained from students in Subgroups 3 and 6.
4. Data obtained from students in Subgroups 4 and 7.
5. Data obtained from students in Subgroups 5 and 8.

A calculator machine was used to execute the correlation coefficient and the t-tests. All computations were calculated twice to check for accuracy. A Sigma 7 computer and a program were used to execute the analysis of covariance.

Summary

This chapter contained a description of this study's population, treatments, instruments, hypotheses, research procedures, and statistical procedures. Chapter 4 reports the findings.

Chapter 4

Report of Findings

Chapter 4 is organized into three sections. The first section contains the presentation and interpretation of the findings. In the second section is a discussion of the results. The final section contains a summary of the chapter.

Presentation and Interpretation of Findings

The null hypotheses formulated for this study are:

Hypothesis 1: There is no significant difference between the gain scores obtained by students in Group 1 when compared with the gain scores obtained by students in Group 2.

Hypothesis 2: There is no correlation between the number of units of English 2200 studied and gain scores.

Hypothesis 3: There is no significant difference between the gain scores obtained by students in Subgroup 1 when compared with the gain scores obtained by students in Subgroup 2.

Hypothesis 4: There is no significant difference between the gain scores obtained by students in Subgroup 3 when compared with the gain scores obtained by students in Subgroup 6.

Hypothesis 5: There is no significant difference between the gain scores obtained by students in Subgroup 4 when compared with the gain scores obtained by students in Subgroup 7.

Hypothesis 6: There is no significant difference between the gain scores obtained by students in Subgroup 5 when compared with the gain scores obtained by students in Subgroup 8.

Hypothesis 7: There is no significant difference between the gain scores obtained by students in Subgroup 1 when compared with the gain scores obtained by students in Subgroups 2 when the two subgroups are statistically equated on the pretest.

The results of the tests of these hypotheses will be presented in the order that the hypotheses were written above.

Hypothesis 1

The first hypothesis stated, "There is no significant difference between the gain scores obtained by students in Group 1 when compared with the gain scores obtained by students in Group 2." The first hypothesis was retained. The t-test for independent samples was used to measure the level of significance. No significant difference at the one per cent level was found to exist between gain scores obtained by students in Sample 1 (studied English 2200) and gain scores obtained by students in Sample 2 (did not study English 2200). The finding of "no significant difference" was based on the information given in Table 1.

TABLE 1

Data for Hypothesis 1

Group	Group 1	Group 2
N	61	73
ΣX	246	218
$\bar{X}$	4.032	2.985
ΣX^2	3,827	3,944
df	132	
t	.885	
.01 critical value*	2.358	
finding	not significant	

*.01 critical value for one tailed test df = 120.

As shown in Table 1, $t = .885$, and .885 is not equal to or greater than the .01 critical value of 2.358. Therefore, the null hypothesis was retained because no significant difference was shown. The 61 students who studied English 2200 did not have gain scores significantly greater than the 73 students who did not study the text.

Hypothesis 2

The second hypothesis stated, "There is no correlation between the number of units of English 2200 studied and gain scores." The

second hypothesis was rejected. A correlation coefficient was calculated for ungrouped data using raw scores where:

$$\begin{aligned} N &= 61 \\ \Sigma X &= 516 \\ \Sigma Y &= 246 \\ \Sigma XY &= 1,783 \\ \Sigma X^2 &= 5,000 \\ \Sigma Y^2 &= 3,827 \end{aligned}$$

The correlation between the number of units of English 2200 studied and gain score was $r = -.222$. This finding indicated that the gain score of a student had a low negative relationship to the number of units he reportedly studied. A positive correlation did not exist between the amount of the programmed text studied and gain score.

Hypothesis 3

The third hypothesis stated, "There is no significant difference between the gain scores obtained by students in Subgroup 1 when compared with the gain scores obtained by students in Subgroup 2." The third hypothesis was retained. The t-test for independent samples was used to measure the level of significance. No significant difference at the one per cent level was found to exist between gain scores obtained by students in Subgroup 1 (intrinsic motivation) and gain scores obtained by students in Subgroup 2 (extrinsic motivation). The finding of "no significant difference" was based on the information given in Table 2.

TABLE 2

Data for Hypothesis 3

Group	Subgroup 1	Subgroup 2
N	30	37
ΣX	183	164
$\bar{X}$	6.1	4.432
ΣX^2	2,768	2,538
df	65	
t	.929	
.01 critical value*	2.660	
finding	not significant	

*.01 critical value for two-tailed test df = 60

As shown in Table 2, $t = .929$ and .929 is not equal to or greater than the .01 critical value of 2.660. Therefore, the null hypothesis was retained because no significant difference was shown. The 30 students who were intrinsically motivated to study English 2200 did not have gain scores significantly different from the gain scores of the 37 students who were extrinsically motivated to study English 2200.

Hypothesis 4

The fourth hypothesis stated, "There is no significant

difference between the gain scores obtained by students in Subgroup 3 when compared with the gain scores obtained by students in Subgroup 6." The fourth hypothesis was rejected. The t-test for independent samples was used to measure the level of significance. A significant difference at the one per cent level was found to exist between gain scores obtained by students in Subgroup 3 (studied English 2200; intrinsic motivation) and gain scores obtained by students in Subgroup 6 (did not study English 2200). The finding of "significant" was based on the information given in Table 3.

TABLE 3
Data for Hypothesis 4

Group	Subgroup 3	Subgroup 6
N	10	25
ΣX	111	93
$\bar{X}$	11.100	3.720
ΣX^2	1,723	1,033
df	33	
<u>t</u>	3.301	
.01 critical value*	2.457	
finding	significant	

*.01 critical value for one tailed test df = 30

As shown in Table 3 $t = 3.301$, and 3.301 is greater than the .01 critical value of 2.457. Therefore, the null hypothesis was rejected because a significant difference was shown. Fall quarter students who were intrinsically motivated and studied English 2200 had significantly greater gain scores than fall quarter students who did not study the text.

Hypothesis 5

The fifth hypothesis stated, "There is no significant difference between the gain scores obtained by students in Subgroup 4 when compared with the gain scores obtained by students in Subgroup 7." The fifth hypothesis was retained. The t -test for independent samples was used to measure the level of significance. No significant difference at the one per cent level was found to exist between gain scores obtained by students in Subgroup 4 (studied English 2200; intrinsically motivated) and gain scores obtained by students in Subgroup 7 (did not study English 2200). The finding of "no significant difference" was based on the information given in Table 4, page 53.

As shown in Table 4 $t = -1.219$, and -1.219 is not equal to or greater than the .01 critical value of 2.457. Therefore, the null hypothesis was retained because no significant difference was shown. Winter quarter students who were intrinsically motivated and studied English 2200 did not have significantly greater gain scores than winter quarter students who did not study the text.

TABLE 4

Data for Hypothesis 5

Group	Subgroup 4	Subgroup 7
N	12	23
ΣX	5	74
$\bar{X}$	.417	3.217
ΣX^2	106	1,508
df	33	
t	-1.219	
.01 critical value*	2.457	
finding	not significant	

*.01 critical value for one tailed test df = 30

Hypothesis 6

The sixth hypothesis stated, "There is no significant difference between the gain scores obtained by students in Subgroup 5 when compared with the gain scores obtained by students in Subgroup 8." The sixth hypothesis was retained. The t -test for independent samples was used to measure the level of significance. No significant difference at the one per cent level was found to exist between gain scores obtained by students in Subgroup 5 (studied English 2200; extrinsically

motivated) and gain scores obtained by students in Subgroup 8 (did not study English 2200). The finding of "no significant difference" was based on information in Table 5.

TABLE 5
Data for Hypothesis 6

Group	Subgroup 5	Subgroup 8
N	39	25
ΣX	130	51
$\bar{X}$	3.333	2.040
ΣX^2	1,998	1,403
df	62	
$\underline{t}$	.743	
.01 critical value*	2.390	
finding	not significant	

*.01 critical value for one tailed test df = 60

As shown in Table 5 $\underline{t} = .743$, and .743 is not equal to or greater than the .01 critical value of 2.390. Therefore, the null hypothesis was retained because no significant difference was shown. Spring quarter students who were extrinsically motivated and studied English 2200 did not have significantly greater gain scores than spring

quarter students who did not study the text.

Hypothesis 7

The seventh hypothesis stated, "There is no significant difference between the gain scores obtained by students in Subgroup 1 when compared with the gain scores obtained by students in Subgroup 2 when the two subgroups are statistically equated on the pretest." The seventh hypothesis was retained. An analysis of covariance was used to compute $\bar{f}$. No significant difference at the one per cent level was found between gain scores of students in Subgroup 1 and gain scores of students in Subgroup 2 when the two subgroups were statistically equated on the pretest. The finding of "no significant difference" was based on the data contained in Table 6.

TABLE 6
Data for Hypothesis 7

Source	df	SS _x	SP	SS _y	df'	SS' _y	MS'
Between	1	31.818	32.706	33.618	2542.280	63	40.353
Within	64	2965.938	-1584.433	3388.700	2619.098	64	
Total	65	2997.757	-1551.727	3422.318	76.818	1	76.818

From the information in Table 6, an $\bar{f}$ of 1.903 was computed, where $df_1=1$ and $df_2=63$. The one per cent critical value of 7.08 (for $df_1=1$ and $df_2=60$). Since 1.903 is not equal to or greater than 7.08,

the null hypothesis was retained. No significant difference was shown. The 30 students who were intrinsically motivated to study English 2200 did not have gain scores significantly different from the gain scores of the 37 students who were extrinsically motivated to study English 2200 when the two subgroups were statistically equated on the pretest.

Discussion

This study was conducted to obtain answers to three questions which were stated in Chapter 1. The findings will be discussed in three sections, each section relating to one of the questions. The questions concern (1) the effectiveness of English 2200, (2) intrinsic versus extrinsic motivation, and (3) number of units studied correlated with gain scores.

Effectiveness of English 2200

The question concerning the effectiveness of English 2200 asked, "Will students who study an English usage programmed text demonstrate an increase in English proficiency when compared with students who do not study the text?" The results of the testing of hypotheses 1, 4, 5, and 6 are pertinent to this question.

Hypothesis 1 did not have significant findings. The 61 students who studied English 2200 did not have gain scores significantly greater than the 73 students who did not study the text. The testing of hypothesis 1 utilized the data obtained from students in Groups 1 and 2.

Groups 1 and 2, when added together, equal the entire population of this study.

Hypothesis 5 did not have significant findings. The winter quarter students who studied English 2200 did not have significantly greater gain scores than winter quarter students who did not study the text.

Hypothesis 6 did not have significant findings. The spring quarter students who studied English 2200 did not have significantly greater gain scores than spring quarter students who did not study the text.

Hypothesis 4 was the only hypothesis of this study which did have significant findings. Fall quarter students who studied English 2200 had significantly greater gain scores than fall quarter students who did not study the text.

Intrinsic Versus Extrinsic Motivation

The second question concerns the effectiveness of intrinsic motivation compared with the effectiveness of extrinsic motivation. "Will a difference exist between intrinsically motivated learning and extrinsically motivated learning when students are told by a faculty member of their department that they are deficient in a skill needed for their profession and are advised how they may improve the skill?" The results of the testing of hypotheses 3 and 7 are pertinent to this

question. Neither hypothesis had significant findings.

The 30 fall and winter quarter students who were intrinsically motivated to study English 2200 did not have gain scores significantly different from the gain scores of the 37 spring quarter students who were extrinsically motivated to study English 2200 (hypothesis 3).

The 30 students who were intrinsically motivated to study English 2200 did not have gain scores significantly different from the gain scores of the 37 students who were extrinsically motivated to study English 2200 when the two groups were statistically equated on the pretest (hypothesis 7). The testing of hypotheses 3 and 7 utilized the data obtained from students in Subgroups 1 and 2, most of whom were also included in Group 1.

Based on the results of the tests of hypotheses 3 and 7, the following statement seems to be true, "In this study, no difference existed between intrinsically motivated learning and extrinsically motivated learning."

Number of Units Studied Correlated with Gain Scores

The question concerning the correlation between the number of units of English 2200 studied and gain score asked, "Will a positive correlation exist between the amount of the programmed text studied and gain score?" The result of the testing of hypothesis 2 is pertinent to this question.

The testing of hypothesis 2 resulted in a non-significant low negative correlation. The finding indicated that the gain score of a student had a low negative relationship to the number of units of English 2200 he studied. The testing of hypothesis 2 utilized the data obtained from the 61 students in Group 1. Additional hypotheses were not formulated to test the data obtained from each quarter because the groups would have been too small to give meaningful measurements.

Based on the result of the test of hypothesis 2, the following statement seems to be true, "In this study, a positive correlation did not exist between the amount of English 2200 studied and gain score."

Summary

Table 8, page 60, summarizes the findings of this study.

One reason for conducting this study was to evaluate English 2200, an English usage programmed text, as a method for improving English proficiency of para-professionals. When data from (1) the entire population, (2) winter quarter students, and (3) spring quarter students were analyzed, students who studied English 2200 did not have greater gain scores than students who did not study the text. However, when data from fall quarter students were analyzed, students who studied English 2200 did have greater gain scores than students who did not study the text. A correlation coefficient was applied to the data

TABLE 7

A Summary of the Findings

Hypotheses	Findings
1. There is no significant difference between the gain scores obtained by students in Group 1 when compared with the gain scores obtained by students in Group 2.	not significant null retained
2. There is no correlation between the number of units of <u>English 2200</u> studied and gain scores.	null rejected but correlation was negative
3. There is no significant difference between the gain scores obtained by students in Subgroup 1 when compared with the gain scores obtained by students in Subgroup 2.	null retained not significant
4. There is no significant difference between the gain scores obtained by students in Subgroup 3 when compared with the gain scores obtained by students in Subgroup 6.	null rejected significant
5. There is no significant difference between the gain scores obtained by students in Subgroup 4 when compared with the gain scores obtained by students in Subgroup 7.	null retained not significant
6. There is no significant difference between the gain scores obtained by students in Subgroup 5 when compared with the gain scores obtained by students in Subgroup 8.	null retained not significant
7. There is no significant difference between the gain scores obtained by students in Subgroup 1 when compared with the gain scores obtained by students in Subgroup 2 when the two subgroups are statistically equated on the pretest.	null retained not significant

obtained from only those students who studied English 2200. The relationship between gain scores and number of units of the text reportedly studied was a non-significant low negative correlation.

Another reason for conducting this study was to determine whether a difference existed between the CET gain scores of intrinsically motivated students. Data analyzed indicated that no difference existed between intrinsically motivated learning and extrinsically motivated learning.

This chapter presented the findings and a discussion of the results. Chapter 5 contains a summary of the study with conclusions and recommendations drawn from the findings and the literature.

Chapter 5

Summary, Conclusions, and Recommendations

Chapter 5 includes a summary of the study, conclusions drawn from the analysis of the data, and recommendations based on the findings of the study.

Summary

This study was an evaluation of an English usage programmed text as a method for improving English proficiency of para-professionals and an evaluation of intrinsic and extrinsic motivation used with the text.

Literature related to the research was reviewed and reported under three categories: (1) competency based education, (2) programmed instruction, and (3) intrinsic/extrinsic motivation.

The total population for this study consisted of all 134 elementary education students who were enrolled in the para-professional quarters at Montana State University during the 1971-1972 school year.

Each student in the population was given the Comprehensive English Test (CET) to measure his English proficiency. If a student's pretest score was below the arithmetic mean of his class, he was considered deficient in English usage. Deficient students were urged to study English 2200, a programmed text. Fall and winter quarter students were intrinsically motivated to study the text. Spring

quarter students were extrinsically motivated to study the text. All students were given the CET as a posttest.

Statistical analysis of the data included computations of: (1) t-tests, (2) a correlation coefficient, and (3) an analysis of covariance. Each relationship pertinent to this study was analyzed and subjected to tests of significance according to a stated level of acceptance and was presented in tabular form.

Conclusions

On the basis of the statistical analysis used in this study, only one of the seven null hypotheses was rejected. The conclusions which follow were made with respect to the three questions of this study concerning: (1) effectiveness of English 2200, (2) intrinsic versus extrinsic motivation, and (3) number of units studied correlated with gain scores.

Effectiveness of English 2200

The question concerning the effectiveness of English 2200 asked, "Will students who study an English usage programmed text demonstrate an increase in English proficiency when compared with students who do not study the text?"

The results of this study do not allow a definitive answer to be made to this question. When data from (1) the entire population, (2) winter quarter students, and (3) spring quarter students were

analyzed, students who studied English 2200 did not have greater gain scores than students who did not study the text. However, when data from fall quarter students were analyzed, students who studied English 2200 did have greater gain scores than students who did not study the text.

The discrepancy in the findings was possibly caused by fall quarter students telling winter and spring quarter students the following information:

1. Nothing drastic happens if one does poorly on the CET posttest.
2. Nothing laudatory happens if one does well on the CET posttest.
3. No one checks to make sure that the number of units one reports he completed in English 2200 were actually completed. Therefore, one can "fudge" his answer.
4. This is probably a graduate study. So why bother to do anything?

Intrinsic versus Extrinsic Motivation

The question concerning the effectiveness of intrinsic motivation compared with the effectiveness of extrinsic motivation asked, "Will a difference exist between intrinsically motivated learning and extrinsically motivated learning when students are told by a faculty

member of their department that they are deficient in a skill needed for their profession and are advised how they may improve the skill?"

Data analyzed for this study indicated that no difference existed between intrinsically motivated learning and extrinsically motivated learning. Two limitations of this study were:

1. Intrinsic and extrinsic treatments, as defined in this study, may not have differed enough to result in statistically significant findings.
2. Gain scores were used to measure learning. Learning may have occurred which was not measured by CET.

Therefore, this finding should not be generalized to mean that a difference between intrinsic and extrinsic motivation would not exist for (1) differently defined treatments or (2) differently measured gains.

Number of Units Studied Correlated with Gain Scores

The question concerning the correlation between the number of units of English 2200 studied and gain score asked, "Will a positive correlation exist between the amount of the programmed text studied and gain score?"

Data analyzed for this study indicated that a non-significant low negative correlation existed between the amount of English 2200 studied and gain score. A limitation of this study was that the

number of units a student reported he completed in English 2200 was not checked. Students could inflate their reports. Therefore, this finding should not be interpreted to mean that English 2200 is definitely not an effective method for improving English proficiency.

Recommendations

Faculty members within the Department of Elementary Education at Montana State University were concerned that some of their students were being certified to teach, yet were not proficient in spoken and written English. The motivation for this study was a need to improve the English proficiency of Elementary Education students.

This study was an evaluation of English 2200 as a method for improving English proficiency and an evaluation of extrinsic and intrinsic motivation used with the text. Tentative conclusions can be stated as to the effectiveness of English 2200. But the reader is cautioned that these conclusions cannot be generalized to other groups and other situations because of extraneous variance. The findings of this study do not support one type of motivation as being superior to the other type. Based upon the review of selected literature and the conclusions of this study, the following recommendations were made.

Recommendations to Continue Present Practice

1. Faculty members of the Department of Elementary Education

at Montana State University should persevere in their attempt to insure that their graduates are equipped with the skills to become excellent teachers. English proficiency is one of the necessary skills.

2. Faculty members of the Department of Elementary Education at Montana State University should continue to attempt to identify, measure, and remediate where necessary, the skills they want their graduates to possess.

Recommendations for Further Research

1. If a study evaluating motivational methods is conducted, the intrinsic motivation and extrinsic motivation treatments should be concurrent.

2. If a study evaluating motivational methods is conducted, the intrinsic motivation and extrinsic motivation treatments should differ more than they did in this study. Two suggestions for greater differentiation are:

a. Intrinsic motivation may be enhanced by professors, in addition to the language arts professor, stressing the importance of proper English usage. The importance of communication skills should be stressed throughout the teacher-training program and not just during one quarter or in one course.

b. Extrinsic motivation may be enhanced by grading students' performance and weighting the grade as a major portion of a final course grade.

3. If a study evaluating a method (or methods) of remediating English deficiency is conducted, an instrument (or instruments) should be selected which would allow for greater accuracy in the diagnosis of students' deficiencies.

4. After diagnosis of students' deficiencies, the method of remediation should be individualized to a greater degree than it was in this study. Texts, tapes, workbooks, and other media should be integrated into modular lessons to remediate certain deficiencies. Students would participate in as many of the modules as their deficient areas and styles of learning indicated.

Recommendation to Change Present Practice

Finally, an ideal situation would be one in which all elementary education students were required to take an English course. This course would be based on the competency based education model. The English course should have the following components:

1. Competencies necessary for passing the course are explicitly defined and made public.
2. Instruction is modularized.
3. Careful diagnosis and recommendations are made for each

student.

4. The time in which a student may complete the course is flexible. One student may need only the time necessary to take the posttests. Another student may need ten months to meet the criteria.

5. And, the course is on a pass/incomplete basis only.

The above recommendations are made in hopes that members of teacher training institutions will persevere in their attempt to insure that their graduates are equipped with the skills to become excellent teachers. It is hoped that faculty members will continue to attempt to identify and measure English proficiency--and other skills they want their graduates to possess--and to determine which method of motivation best promotes the acquisition of those skills.

APPENDICES

APPENDIX A

Table 8 in this appendix identified students within each group and subgroup.

TABLE 8
Composition of Samples and Subgroups

Group	Student Number	Number of Students	
Group 1	F1 - F10	10	
	W36 - W47	12	
	S71 - S109	39	
			61
Group 2	F11 - F35	25	
	W48 - W70	23	
	S110 - S134	25	
			73
Subgroup 1	F1 - F17	17	
	(except F10)	(1)	
	W36 - W50	15	
	(except W47)	(1)	
			30
Subgroup 2	S71 - S116	46	
	(except S101-S109)	(9)	
			37
Subgroup 3	F1 - F10	10	10
Subgroup 4	W36 - W47	12	12
Subgroup 5	S71 - S109	39	39
Subgroup 6	F11 - F35	25	25
Subgroup 7	W48 - W70	23	23
Subgroup 8	S110 - S134	25	25

Student number refers to S No's. in Table 9 of this appendix.

Subgroups 1 and 2 are comprised of students listed in numerical order in Table 9 with some exceptions. The exceptions are those students whose pretest scores were not equal to or less than the mean for their class, therefore, they were not considered to be deficient in English usage. They scored above the mean and were not asked to study English 2200, yet they chose to study part or all of the text. (The mean scores for each quarter are as follows: fall $\bar{X} = 47$, winter $\bar{X} = 53$, and spring $\bar{X} = 48$.) The exceptions are not included in Subgroups 1 and 2 because they are not considered to have been intrinsically and extrinsically motivated, respectively.

Group 1 and Group 2 added together equal the entire population of this study. Most of the students in Subgroups 1 and 2 are also in Group 1. Subgroups 3, 4, and 5 added together equal Group 1. Subgroups 6, 7, and 8 added together equal Group 2.

TABLE 9

Specific Data for Each Student

<u>S</u> No.	Units	Pre	Post	Gain	<u>S</u> No.	Units	Pre	Post	Gain
F1	3	31	45	14	F27	0	57	64	7
F2	1	47	45	-2	F28	0	57	63	6
F3	2	46	53	7	F29	0	57	63	6
F4	5	44	60	16	F30	0	54	59	5
F5	7	28	33	5	F31	0	54	52	-2
F6	11	30	54	24	F32	0	52	57	5
F7	1	34	50	16	F33	0	50	56	6
F8	5	38	53	15	F34	0	50	57	7
F9	2	44	50	6	F35	0	48	48	0
F10	2	50	60	10	W36	4	45	44	-1
F11	0	41	46	5	W37	4	43	47	4
F12	0	34	41	7	W38	11	47	50	3
F13	0	46	56	10	W39	11	43	48	5
F14	0	46	54	8	W40	11	51	52	1
F15	0	31	50	19	W41	11	53	54	1
F16	0	38	38	0	W42	8	37	34	-3
F17	0	47	53	6	W43	9	44	39	-5
F18	0	50	57	7	W44	5	47	45	-2
F19	0	49	52	3	W45	11	43	46	3
F20	0	60	61	1	W46	11	51	52	1
F21	0	67	61	-6	W47	11	55	53	-2
F22	0	52	53	1	W48	0	31	51	20
F23	0	75	69	-6	W49	0	33	35	2
F24	0	48	55	7	W50	0	48	46	-2
F25	0	49	50	1	W51	0	55	56	1
F26	0	51	49	-2	W52	0	60	55	-5

TABLE 9 (continued)

<u>S No.</u>	<u>Units</u>	<u>Pre</u>	<u>Post</u>	<u>Gain</u>	<u>S No.</u>	<u>Units</u>	<u>Pre</u>	<u>Post</u>	<u>Gain</u>
W53	0	55	60	5	S81	11	47	48	1
W54	0	64	80	16	S82	11	45	40	-5
W55	0	67	72	5	S83	11	45	53	8
W56	0	56	67	11	S84	7	41	29	-12
W57	0	57	51	-6	S85	10	45	47	2
W58	0	60	57	-3	S86	11	41	51	10
W59	0	55	58	3	S87	4	39	47	8
W60	0	54	60	6	S88	5	45	58	13
W61	0	58	54	-4	S89	11	36	39	3
W62	0	54	65	11	S90	7	33	45	12
W63	0	54	66	12	S91	8	40	46	6
W64	0	57	63	6	S92	11	41	43	2
W65	0	54	55	1	S93	7	42	40	-2
W66	0	55	48	-7	S94	11	39	40	1
W67	0	54	58	4	S95	4	29	40	11
W68	0	57	52	-5	S96	11	47	48	1
W69	0	59	69	10	S97	10	46	48	2
W70	0	76	69	-7	S98	11	48	44	-4
S71	3	20	18	-2	S99	11	40	55	15
S72	11	42	45	3	S100	11	33	43	10
S73	10	37	47	10	S101	11	54	53	-1
S74	9	33	44	11	S102	8	61	61	0
S75	10	43	39	-4	S103	11	60	56	-4
S76	8	48	49	1	S104	10	51	63	12
S77	11	43	46	3	S105	11	53	59	6
S78	11	46	47	1	S106	11	51	61	10
S79	11	47	53	6	S107	10	50	44	-6
S80	9	45	53	8	S108	11	61	53	-8

TABLE 9 (continued)

<u>S</u> No.	Units	Pre	Post	Gain	<u>S</u> No.	Units	Pre	Post	Gain
S109	11	51	53	2	S122	0	55	55	0
S110	0	43	46	3	S123	0	62	60	-2
S111	0	32	40	8	S124	0	52	46	-6
S112	0	33	44	11	S125	0	56	60	4
S113	0	26	50	24	S126	0	56	53	-3
S114	0	47	36	-11	S127	0	68	68	0
S115	0	43	48	5	S128	0	53	51	-2
S116	0	37	42	5	S129	0	60	53	-7
S117	0	61	72	11	S130	0	70	68	-2
S118	0	54	46	-8	S131	0	65	66	1
S119	0	60	64	4	S132	0	64	65	1
S120	0	83	83	0	S133	0	55	65	10
S121	0	72	71	-1	S134	0	51	57	6

Key:S No. = Student number. F = fall; W = winter; S = springUnits = units of English 2200 studied

Pre = score on CET at beginning of quarter

Post = score on CET at end of quarter

Gain = (post CET score) - (pre CET score)

APPENDIX B
LETTERS TO STUDENTS

LETTER TO FALL QUARTER STUDENTS

Name

Recently you took the English Expression portion of the Cooperative English Test. You took this test because of the concern that your department, the Department of Elementary Education, has for the English proficiency of the para-professionals and student teachers. It is the responsibility of the Department of Elementary Education to insure that you have the proper skills to equip you to become an excellent teacher--this includes using proper English in speech and writing in the classroom. The Cooperative English Test was used as a "tool" to measure your English expression so that, if needed, an opportunity for improvement could be offered to you.

As you know, your score does not count as part of your grade for any course. The highest possible test score was 90. The mean score for the class was 47. The Department of Elementary Education considers scores from 48 to 52 to be average. Scores greater than 52 are considered above average; scores less than 48 are considered below average.

Your score is ABOVE AVERAGE. AVERAGE. BELOW AVERAGE. *

If your rating is below average, you are strongly urged to purchase the book ENGLISH 2200 by Joseph C. Blumenthal (Harcourt, Brace, & World; 1964). It is a programmed learning book which you will probably be able to complete comfortably by yourself during this quarter. There will be a meeting to explain the ENGLISH 2200 program:

Date - Friday, October 8, 1971
Time - 10:00 a.m.
Place - Trap 312

Of course, if your rating is above average or average, you may also complete the programmed book if you want; there is not one of us who could not use some improvement. However, the Elementary Education Department's main concern is with those students who are below average.

At the end of this quarter you will be retested whether or not your score was above average, average, or below average, and whether or not you purchase and complete ENGLISH 2200.

* The appropriate term was circled on each student's letter.

LETTER TO WINTER QUARTER STUDENTS

Name

Recently you took the English Expression portion of the Cooperative English Test. You took this test because of the concern that your department, the Department of Elementary Education, has for the English proficiency of the para-professionals and student teachers. It is the responsibility of the Department of Elementary Education to insure that you have the proper skills to equip you to become an excellent teacher--this includes using proper English in speech and writing in the classroom. The Cooperative English Test was used as a "tool" to measure your English expression so that, if needed, an opportunity for improvement could be offered to you.

As you know, your score does not count as part of your grade for any course. The highest possible test score was 90. The mean score for the class was 53. Based on the scores obtained in your class, scores from 54 to 60 are considered average. Scores greater than 60 are considered above average; scores less than 54 are considered below average.

Your score is ABOVE AVERAGE. AVERAGE. BELOW AVERAGE.*

If your rating is below average, you are strongly urged to purchase the book ENGLISH 2200 by Joseph C. Blumenthal (Harcourt, Brace, & World; 1964). It is a programmed learning book which you will probably be able to complete comfortably by yourself during this quarter. There will be a meeting to explain the ENGLISH 2200 program:

Date - Tuesday, January 25, 1972
Time - 4:00 p.m.
Place - Reid 102

Of course, if your rating is above average or average, you may also complete the programmed book if you want; there is not one of us who could not use some improvement. However, the Elementary Education Department's main concern is with those students who are below average.

At the end of this quarter, you will be retested whether or not your score was above average, average, or below average, and whether or not you purchase and complete ENGLISH 2200.

* The appropriate term was circled on each student's letter.

LETTER TO SPRING QUARTER STUDENTS

Name

Recently you took the English Expression portion of the Cooperative English Test. You took this test because of the concern that your department, the Department of Elementary Education, has for the English proficiency of the para-professionals and student teachers. It is the responsibility of the Department of Elementary Education to insure that you have the proper skills to equip you to become an excellent teacher--this includes using proper English in speech and writing in the classroom. The Cooperative English Test was used as a "tool" to measure your English expression so that, if needed, an opportunity for improvement could be offered to you.

As you know, your score does not count as part of your grade for any course, although your participation may have a positive effect if your grade in Ed. 312 is borderline. The highest possible test score was 90. The mean score for the class was 48. The Department of Elementary Education considers scores 47 and below to be below average. If your score is below the mean, you are strongly urged to participate in the English 2200 program. In order to help the people whose scores are above the mean to determine whether or not they wish to participate in the program, this group is divided into two parts, average and above average. Scores from 48 to 61 are considered average; scores greater than 61 are considered above average.

Your score is ABOVE AVERAGE. AVERAGE. BELOW AVERAGE.*

If your rating is below average, you are strongly urged to purchase the book English 2200 by Joseph C. Blumenthal (Harcourt, Brace, & World; 1964). It is a programmed learning book which you will probably be able to complete comfortably by yourself during this quarter. If your rating is above average or average, you may also complete the programmed book if you want; there is not one of us who could not use some improvement. However, the Elementary Education Department's main concern is with those students who are below average.

The meeting to explain the English 2200 program will be announced.

At the end of this quarter you will be retested whether or not your score was above average, average, or below average, and whether or not you purchase and complete English 2200.

* The appropriate term was circled on each student's letter.

CHART TO SPRING QUARTER STUDENTS

Student Progress Chart*

English 2200

Name _____

This is an individualized programmed learning experience which you may complete at your own speed. It is probably wise, however, to space your time so that you do not have the entire English 2200 program to do during the last week of the quarter. The following suggested schedule would allow you to comfortably complete the program before the re-test which will be given Wednesday, May 31, and Thursday, June 1.

<u>Units</u>	<u>Completed by</u>	<u>Units</u>	<u>Completed by</u>
1-2	April 21	7-8	May 12
3-4	April 28	9-10	May 19
5-6 (& half-way test)	May 5	11 (& final test)	May 26

Unit	Pre-test		Unit in book completed (date)	Post-test		(check) Unit successfully completed
	90% is	My score is		90% is	My score is	
1	45			45		
2	45			45		
3	45			45		
4	33			33		
5	41			41		
6	39			39		
half-way	--		----	--		----
7	35			35		
8	37			37		
9	23			23		
10	30			30		
11	27			27		
final	--		----	--		----

* For students' use only. The chart was not evaluated by any faculty or by this researcher.

APPENDIX C

COPY OF LETTER FROM EDUCATIONAL TESTING SERVICE

EDUCATIONAL TESTING SERVICE

PRINCETON, N. J. 08540

Area Code 609
921-9000
CABLE-EDUCTES/SVC

Russell W. Martin Jr.
Assistant Treasurer

December 28, 1972

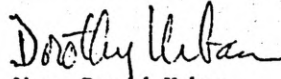
Ms. Barbara Roush Brown
Department of Educational Services
Montana State University
805 Peter Koch Tower
Bozeman, Montana 59715

Dear Ms. Brown:

Your letter of December 13 requesting permission to bind a copy of Co-operative English Tests - English Expression in your thesis has been referred to me for response. Since thesis copies are microfilmed and made generally available, our policy is not to allow actual test copies to be included but, rather, to suggest that a page be inserted citing the instrument used and noting its availability to qualified users.

I am indeed sorry that I could not be of help to you in this instance, and I hope the suggested alternative will be satisfactory.

Sincerely yours,



Mrs. David Urban
Copyrights, Licensing and
Permissions Administrator

DU/lrs

cc: Mr. Sherman
Mrs. Tchorni

LITERATURE CITED

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