

LIBRARY INSTRUCTION IN A COMMUNITY COLLEGE: A STUDY TO
DETERMINE THE COMPARATIVE EFFECTIVENESS OF CLASSROOM
TEACHING AND A VIDEO SELF-INSTRUCTION UNIT FOR
DEVELOPMENTAL AND DEGREE-PROGRAM STUDENTS

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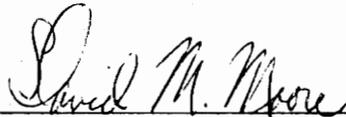
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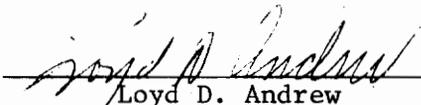
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Community College Education

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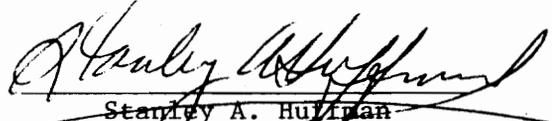
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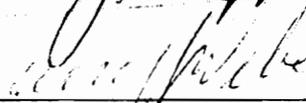
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Chapter 1

INTRODUCTION

If community colleges have accepted the challenge to educate students of all ability levels, then their libraries are faced with a still more difficult task. While the image of the community college library has changed from a dusty book repository to an energetic learning resources center, most incoming students, regardless of their ability level, view it as a "labrynthine horror" (Butterfield, 1973).

To some degree, this feeling of helplessness is generated by a commonplace practice in many of our colleges - the impersonal "mass inoculation" orientation program endured annually by most freshmen (Lynch, 1973). Typically, a visit to the library will be included in the institution's agenda for new students, but the tour is necessarily brief, and little opportunity for direct instruction is afforded (Melum, 1971). At best, sensitive instructors will see the gap and provide single, limited-objective lessons in library use later in their specific courses. At worst, instructors fail to see the need for further elaboration, and the student is given no other library instruction, save for the opening day orientation.

In any case, most students are left with incomplete or erroneous notions about the nature and depth of the resources on hand (Dudley, 1972). As a result, librarians find it difficult to impart a working knowledge of the library to the best of students enrolled in degree programs, much less to the "high risk" students who have become so closely identified with the community college.

Need for the Study

It is generally agreed that community colleges have been inundated by all types of students, and the needs of the "high risk," "disadvantaged," or "developmental" student, as he is variously called, are the most pressing and perplexing. To accept the mandate of its parent institution, the community college library - heretofore, as other libraries, associated with the more literate and gifted of students - has had to reshape its boundaries and self-image to accommodate lesser-talented individuals. Books no longer stand in proud isolation on the shelves; programmed texts, visuals, multimedia packages, and items of realia have been added to library collections on the theory that not all students are print oriented.

From five years direct working experience in Virginia Community College System (VCCS) libraries, this researcher concludes that the state-of-the-art in library instruction is far from what is possible or desirable. In most community colleges in Virginia, library instruction usually consists of a scenario where the instructor invites the reference librarian to his classroom for one class period. By whatever method, the librarian proceeds to teach the mysteries of the card catalog, periodical indexes, and major reference tools. Librarians at VCCS institutions report that instructors are generally gratified if the presentation is organized and concise enough to fall short of the class-period allotment. Sometimes the instructor will elect to teach the library content himself, to insure that its treatment is brief. Certainly this attitude is both understandable and justifiable, given the present state of the curriculum in VCCS, and the lack of specific library-use courses.

The instructor is obliged to cover his own course content first, which is difficult enough to accomplish during the academic term without the addition of supplemental material. However, most instructors will provide some sort of library instruction, even if abbreviated, because of its inherent worth to all courses. Some instructors do so without benefit of the librarian's prodding, but others must be cajoled.

With its roots based in expedience, this limited method of teaching library skills appears to be so widespread that its alteration is unlikely in the foreseeable future. While some writers suggest that accredited courses taught by librarians to all undergraduates would be a far more effective method of instruction (Dudley, 1972), the wheels of reform are slow, and no such curriculum proposals have ever been passed in the Virginia Community System. Concerned instructors and librarians are left with the inevitable expedient - one class period, one hour, one opportunity to enlighten students at every ability level.

If bright community college students are difficult to instruct in library skills in the one-hour time frame, it may be conceded that remedial or developmental students - with their special learning problems - make the task more difficult still. The studies cited in this paper will show that developmental students need library instruction just as much, if not more, than students planning to transfer to four year colleges, and further, that non-print media are successful ways of reaching both types of students. The writer conferred with a panel of currently practicing community college librarians, English instructors (both developmental and transfer), audiovisual specialists, and learning-lab instructor-tutors, who in their collective opinion,

indicated that: developmental students tend not to have picked up any library skills in high schools; once in community colleges, they tend not to be exposed to libraries as frequently as two-year degree students (the latter often have writing assignments bringing them in contact with bibliographic resources); and, if the library is relatively new and comfortably furnished, developmental students often see it as an alternative location for a lounge or student center! In a critical situation, the brighter, degree-program students can navigate their way through course assignments requiring library use, even though prior instruction has been limited and poor in quality. But developmental students, with their unique attitudes, knowledge gaps, and special learning problems (Moore, 1970; Roueche and Kirk, 1973), are hard pressed to use libraries in the best of circumstances (Foster, 1974).

What is needed, clearly, is some method to exploit the possibilities within the limitations thus described. The solution calls for a teaching method, proven effective by research, for presenting large amounts of content in an undesirably brief time period to individuals at all ability levels! Reduced to the possible, one would settle for an understanding of the relative effectiveness of the varying techniques that are used to teach library skills. Whether any method can be truly "effective" under the ubiquitous limitations imposed by the one-hour time frame, however, is a matter of pure conjecture.

Still, the need to provide an effective but brief library orientation is a common and vexing problem. The literature is a beginning step, certainly, but it offers little source material addressed to the problem of teaching library skills to both high and low achievers.

However, there is enough documentation scattered throughout analyses of community college developmental programs, comparative studies in media research, and commentaries by librarians to support the design of the experiment herein proposed. (See Chapter 2.) These disparate sources will be meshed together in a theoretical framework to support the hypotheses and to give direction to this study.

Purpose of the Study

This study tested the comparative effectiveness of two methods of library instruction, one, the traditional classroom teaching mode, and two, self-instruction by a videocassette, by conducting an experiment on a group of developmental and degree-program English students at J. Sargeant Reynolds Community College.

The experiment called for 1) random assignment of subjects in each group to one of the two treatments, namely, traditional classroom teaching, or videocassette self-instruction; 2) administration of the treatments; 3) post-testing of all participants immediately after the treatments; and 4) delayed post-testing, again, for all subjects, at a designated interval after the experiment.

It was the researcher's intention to replicate the ordinary conditions for library instruction; therefore, the "library skills" treatment plus testing did not exceed one class period in the lecture discussion mode. Since self-instruction is self-paced, the hour restriction was not levied on students in that group. In Chapter 3, these procedures will be discussed more fully.

The subjects of the experiment included both developmental and degree-program students, and two methods of instruction were used as

treatments. Therefore, the researcher used analysis of variance with repeated measures to interpret all test scores.

The primary objectives of this experiment were to determine whether library skills could be taught more successfully by the traditional lecture or by a video self-instruction unit, and to assess if either of these methods were comparatively more effective when used in ability-level groupings. Given that "treatments" are teaching methods, with video considered experimental and classroom teaching considered control, specific hypotheses to be tested in this study are as follows:

1. There is no significant difference between experimental and control groups' scores on the immediate post-test.
2. There is no significant difference between developmental and degree-program students' scores on the immediate post-test.
3. There is no significant interaction between treatment effects and type of student on immediate post-test scores.
4. There is no significant difference in immediate post-test and delayed post-test scores.
5. There is no significant interaction between the time of testing and the type of student.
6. There is no significant interaction between the time of testing and the type of treatment.
7. There is no significant interaction among the three variables, time of testing, type of treatment, and type of student.

Limitations

1. This study was limited to students enrolled in English 01 (Verbal Studies) and English 111 (English Composition) during the fall quarter of the 1976-77 year at J. Sargeant Reynolds Community College.

2. The experiment attempted to analyze only the cognitive effect of the two treatments used. No consideration was given to students' affective responses.

Definition of Terms

English 01, Verbal Studies Laboratory. A developmental course in composition designed for students who need help in all areas of writing to bring their proficiency to the level necessary for entrance into their respective curricula. Emphasis on individual instruction. Students may re-register for this course in subsequent quarters as necessary until the course objectives are completed (JSRCC Catalog, 1976). Seven classes of English 01 were used in this experiment.

English 111, English Composition. Prerequisite satisfactory score on appropriate English proficiency examinations and four units of high school English or equivalent. Expository and argumentative writing, ranging from single paragraphs to essays of some length and complexity. Study of logical, rhetorical, and linguistic structures; the methods and conventions of preparing research papers; and the practical criticism of literary types (JSRCC Catalog, 1976). Seven classes of English 111 were used in this experiment.

Developmental students. At JSRCC, those individuals enrolled in English, Mathematics, or Science courses numbered 01-09. A student is placed in these courses after his counselor's close analysis of the high school transcript, the entering test scores (such as the Nelson Denny Reading Test), and other data on the student's achievement level. Developmental students account for 13 percent of the total enrollment at JSRCC, and their average reading level is eighth grade (data courtesy of the JSRCC Office of Educational Planning and Research).

MHBSS. The McGraw Basic Skills System, an integrated group of tests and instructional materials, designed to help instructors determine the academic abilities of a diversely prepared population of students. MHBSS components are the Reading, Writing, Spelling, Vocabulary, Mathematics and Study Skills Tests. The Library Test used in this experiment was a component of the Study Skills Test. The difficulty level of all MHBSS Tests centers on grades 10-13, but the content is derived from college academic disciplines.

Study Skills Test. The MHBSS Study Skills Test is available in two forms, "A" and "B." Each form consists of four smaller specialized testing components: Part I - Problem Solving; Part II - Underlining; Part III - Library Information; and Part IV, Study Habits. The Study Skills Test attempts, in general, to determine the student's readiness to enter college.

Study Skills Test, Part III. Also referred to as the Library Information Test. There are 20 items each on Form A and Form B of the Library

Information Test. Items from the two forms were combined to create a 40-item test, which was used in all the testing activities for this experiment.

Videocassette Library Skills Unit. A 23 minute tape about using the library, produced and directed by the researcher. The script for this tape was also prepared by the researcher, with several English instructors and librarians acting as editorial consultants. It teaches directly to the content of the combined Library Information Test; primary content revolves around use of the card catalog, the periodical indexes, and major reference tools. Many audiovisual special effects are incorporated into the tape in an attempt to highlight key points. The tape was partially studio-produced (courtesy of the audiovisual section of the Learning Resources Center), and partially filmed on site in the college library. Content validity of the tape, and the special effects used to conform with the principles of learning theory, will be discussed more thoroughly in Chapter 3.

Overview

Having presented the broad outline of this project in skeletal form, the writer will describe the details of the study in the succeeding chapters.

Chapter 2 will consist of a review of the literature as it pertains to the study's need, hypotheses, and experimental design. Sections will be included on community college developmental programs, media research and learning theory, and research in library instruction, with a fourth and final section summarizing the chapter.

The research methodology of the dissertation will be explained in Chapter 3. Components of this chapter will include a discussion of population and sample; an explanation of the testing instrument that was used to measure achievement in library skills; comments concerning the development and production of the videocassette; a description of the pilot study; a presentation of the procedural plan of the experiment; a discussion of the treatment of the data; and the statement of the null hypotheses.

Chapter 4, the analysis of the data, will include a section where the hypotheses are tested, and a summary.

Chapter 5 will consist of a summary, discussion, and recommendations for further research.

Chapter 2

REVIEW OF LITERATURE

Research is an ongoing, cumulative activity, which necessarily depends on the results of previous investigations for the formulation of new hypotheses. This experiment was to determine whether library skills could be taught more effectively by the traditional lecture or by a video self-instruction unit and further, whether developmental or traditional students could learn comparatively better by either of those methods. Clearly, a comprehensive review of the literature was needed.

While many subjects and disciplines could have been used to construct hypotheses of substance, the researcher found that three areas of concern fell within the scope of the study. These areas were: (1) community college developmental programs; (2) media research and learning theory; and (3) research in library instruction. This chapter is so divided, with fourth and final section entitled, "Summary."

Community College Developmental Programs

The study seeks to determine if developmental or nondevelopmental students can learn library skills comparatively better by either of two teaching methods. To explain why developmental students are isolated for purposes of comparison, the writer will answer certain basic questions: (1) what characteristics identify developmental students? (2) how are they different from other students? and (3) how are community colleges dealing with the problems of educating developmental students?

Because the community college espouses the "open door" policy, and is conceivably the most democratic of all educational institutions, it must admit persons with less than traditionally expected academic preparation (Roueche and Kirk, 1973). Community colleges have accepted remediation as a legitimate function, taking each student at his level of entry and advancing him as far as his abilities permit (Palinchak, 1973). Whether "remedial" or "developmental" students repeat high school work or not is insignificant if the colleges improve them in some way (Palinchak, 1973).

Who are these developmental students? Certainly they are a significant component of the community college clientele. In the Fall Quarter of 1975, for example, more than 7000 such individuals enrolled in Virginia's community colleges, comprising nearly 12 percent of the System's total enrollment (Virginia Department of Community Colleges, 1975).

If developmental students in VCCS are similar to students described in the literature, they are very often characterized by certain troublesome qualities, among them (Roueche and Kirk, 1973, p. 69):

. . . feelings of powerlessness, worthlessness, alienation, and inappropriate adaptive behaviors-unrealistic levels of aspiration, lack of problem-solving skills and experiences, hostility, aggressiveness and often delinquency.

Other, earlier studies have verified the notion of a poor self-concept for the underachiever: Nason (1958); Combs (1964); and Gallagher (1969).

Roueche and Kirk (1973) further described characteristics defining high-risk students: even with poor high school performance,

deficiency in basic language and mathematical skills, weak motivation, and poor study habits, they often are the first students in their families to attend college. Moore (1970) added that developmental students typically lack confidence in their intellectual and social skills, and further, that they usually dislike testing in any form.

Factors other than intelligence have been related to developmental students' lack of achievement. Tyler (1969, p. 641) emphasized that:

. . . achievement differences in the schoolroom are related to differences in intelligence, but the most carefully designed intelligence or scholastic aptitude test seldom correlates with school achievement to a greater extent than .6.

In fact, developmental students' low verbal ability has been correlated with any number of "non-intellective" variables, among them student perception of study needed; age of parents; the father's education; dependence on parents for financial support; and college attendance by siblings (Abell, 1970). Several writers have suggested, too, that low teacher expectations may have some connection with underachieving students' performances. Rosenthal and Jacobson (1968), Brophy and Good (1970), and Jeter (1975) all found that teachers systematically discriminated in favor of high achievers over low achievers in demanding and reinforcing quality performance.

Comparing developmental students with the "typical" or "average" community college student is tricky at best, misleading at worst.

Palinchak (1973, p. 186), however, explained the distinction:

. . . There is no 'typical' or 'average' community college student as often portrayed in the literature. Most research in this area has concentrated on the transfer aspects of student programs while generally ignoring comparative and remedial

populations, dropouts, occupational students, adults, part-time, night, and continuing education students. It remains blatantly difficult to change traditional academic inquiries that seek to describe only those students who are young, academic, full-time, transfer-oriented day students.

This distinction is significant, for it must be stressed, that in this study, developmental students are being compared to students in transfer-oriented English classes, and not to the nonexistent "typical" community college students. As Palinchak has observed here, "transfer" students are only one component of the diverse clientele, which also includes such categories as veterans, skilled workers, disadvantaged blacks, unclassified students, evening students, and "terminal" students, among others. Yet, for the purposes of this study, a comparison of developmental students with "transfer" students is highly desirable; it creates the setting for a cleaner experimental design. In testing two specific components of the community college clientele, data analysis cannot be encumbered with extraneous comparisons of developmental students with the many other types of students, who may not need, or care, to use the library as frequently as transfer students.

Characteristics of developmental and transfer students aside, what have community colleges actually done to reach underachieving students? Until 1969 or 1970, most attempts at remediation consisted of watered-down versions of regular college courses; instructors were assigned to these courses on the basis of a departmental pecking order, the least experienced teachers usually working with developmental students (Roueche and Kirk, 1973).

Today's developmental instructors, however, are usually volunteers, and educators have realized that individualized instruction and

individual assistance are critical to the success of developmental programs (Lackey and Ross, 1968; Roueche and Kirk, 1973). To further improve conditions for low ability students, writers have uniformly shown concern for class size, scheduling, and adequate testing for efficient placement of students into appropriate level courses (Freligh, 1969). Some writers have expressed the feeling that pre-admission counseling is a requirement for dealing with developmental groups (Berry, 1969; Roueche and Kirk, 1973). Still others stress the need to recognize that for developmental students, aptitude is a function of time; such students should be given more time by variable scheduling for course length and class hours (Moore, 1970; Roueche and Kirk, 1973). But again and again, the literature returns to its central concern - providing developmental students with a wide variety of learning methodologies and teaching strategies. Roueche and Kirk (1973, p. 66), one of the most prolific and articulate of writer-teams on the subject of developmental studies, wrote:

. . . Lecturing may be an appropriate teaching strategy for some students but not for those enrolled in developmental or basic studies programs. Many high-risk students at entry are simply not verbal learners and they are incapable of acquiring knowledge by routine listening or reading.

Bloom (1971) and Chadbourne (1969) also agreed that learning rates, styles, and interests could vary; both advocated the use of varied instructional methods. Moreover, they believed that instructional sequences must provide the learner a means to progress at his own rate.

Colleges in the Virginia Community College System have demonstrated a wide variety of techniques for accommodating the needs of developmental students (Workman, 1975). This researcher's survey of

the various catalogs in VCCS indicated that students were placed in developmental courses by counselors, after close analysis of transcripts, entering test scores, and other data on the students' achievement levels. VCCS catalogs also agreed that the goal of developmental programs was to provide students with basic skills so they might be successful in regular, nondevelopmental courses. Workman's (1975, p. 1) paper pointed out a spinoff function of VCCS, as well as other, developmental programs:

. . . In addition to meeting the needs of lower ability students, a developmental studies program raises the standards of nondevelopmental courses by removing unprepared students.

At Virginia Highlands Community College (Vaughan and Puyear, 1972), entering students who score in the bottom quartile on the Comparative Guidance and Placement Test, and have less than a "C" grade in high school math or English, are placed in regular math or English, but are also registered for "Lab 99." This is an open laboratory taught by the same instructor who teaches the regular course. Students have as much time as necessary to master the course objectives, and are not required to attend "lab" once they are making a "C" in the regular course.

Workman (1975) reported the work of developmental math instructors at Germanna Community College. They found that an individualized learning environment, using contract grading, significantly improved scores on mathematical tests, but did not improve student attitudes, motivation, self-concepts, or study skills. Another study related to developmental math is Leake and Ruben (1975), reporting from New River Community College. They felt that reading and math instructors should

work cooperatively to provide alternative methods of instruction, and that a tutor should be available in the mathematics laboratory.

At Piedmont Virginia Community College, developmental math is individualized with each student using a textbook/workbook, as well as taped instruction; in developmental reading, graduated level materials are also used in an individualized setting (Workman, 1975). Moreover, timed filmstrip aids are used at PVCC to increase reading speed; small group sessions are employed to help students with word recognition and pronunciation.

J. Sargeant Reynolds Community College, the site of this study, has experimented with several variations in the teaching of developmental courses. As a charter member of that institution, the researcher briefly describes the developmental program's history. In the first year of the college's operation, all developmental courses were taught under the aegis of a Division of Developmental Studies, with full-time instructors assigned to the Division, and having access to an independently operated learning laboratory. It was felt later that the program could be operated more efficiently with developmental English courses taught under the English department in the Humanities Division, and with developmental math courses transferred to the math department in the Math and Science Division. Thus, the Division of Developmental Studies was disbanded and its instructors reassigned to new divisions; at the same time, the learning laboratory was transferred to the management of the Learning Resources Center.

Since that time, and specifically, in the case of developmental English, all instructors have uniformly shared developmental teaching

responsibilities. That is, no one instructor is the "developmental specialist," but all teach at least one developmental course. Developmental English instructors have the option of referring their students to the Learning Laboratory, if needed, to do individualized work. (For developmental math, there is a separate math lab.)

These descriptions have been provided so that the reader might sample something of the many types of developmental programs in Virginia. In the developmental programs operating nationwide, Palinchak (1973) has noted that many community colleges have proclaimed success in their services to developmental students; he feels, however, that programs such as those described above, are not working well, and that instructor priorities and energies need to be redirected.

Palinchak is not without allies. Many critics agree that community colleges have indeed created obstacles for effective teaching in their implementation of an idealistic open door policy (Moore, 1970; Roueche and Kirk, 1973). These writers feel that community colleges are still having difficulty coping with the diverse ability levels of non-traditional students. As they see it, faculty continue to teach to the middle; developmental program administrators buy unnecessary new hardware and software in unstandardized formats; faculty do not understand their goals and objectives. In sum, lesser ability students are frequently misunderstood and inadequately handled (Moore, 1970).

Moreover, developmental instructors have sometimes questioned the value of their teaching efforts (Wagner, 1975). One instructor allowed that "students enrolled in college remedial programs typically profit little from them" (Chadbourne, 1969). Thus, there is controversy

and disagreement over the value of developmental courses as they are currently being taught.

It is troublesome that little media research has dealt directly and empirically with the developmental student. The paper has already cited studies correlating age, sex, teaching expectations, and other independent variables with success in remedial programs (Abell, 1970; Schroeder and Sledge, 1966; Rosenthal and Jacobson, 1968). But the first national study of the effectiveness of remedial education programs in community colleges was not completed until 1968 (Roueche), and even then, no attempt was made to study the comparative empirical effectiveness of different media used in the classroom. Further, in a follow-up study to the 1968 work, Roueche and Kirk (1973) commented on the general lack of appropriate research, especially the evaluative data that is needed to assess academic performance of developmental students.

The periodical press, likewise, has been largely silent on this matter of developmental students and the cognitive effects of different types of media. The media studies that have appeared in journals have been historically and almost exclusively concerned with traditional four-year college students (see, for example, VanderMeer's 1950 study of films as course structure, or Carpenter's (1955, 1958) studies of the effects of television instruction at Pennsylvania State University).

Unfortunately, of the minuscule research that does exist on developmental students/appropriate teaching methods, much is contradictory within itself, or with current professional folklore. McKeachie (1969) suggested that less able students would perform poorly in discussion classes; Hoffman and Harden (1969) amplified that finding by

adding that poorer students would do best in large classes conducted in an authoritarian manner. In contemporary academic circles, however, lip service is given to the value of smaller classes with the discussion mode, and practice indicates that community colleges do arrange smaller classes whenever possible. (Instructors at J. Sargeant Reynolds Community College explained their rationale - small group discussion is an effective means, in their estimation, for the teacher to respond to the classroom "climate.") These studies and practices are examples of the many varying ideas that appear throughout the professional literature concerning the effective teaching of developmental students, and in part, they underlie this researcher's desire to add data to the existing research.

Moore (1970, p. 71) has aptly expressed the difficulties of remedial instruction in terms of the instructor. For the most part, Moore believes that teachers of remedial students at the college level are self-trained, largely operating on a learn-as-you-go basis, without structure, description, theory, or methodology. He described, in list form, the common frustrations of developmental teachers:

. . . attitude toward the students to be taught, lack of training to deal with them, no place to get the needed training, and not even books or other literature that is appropriate for college-age students.

Further he wrote, there

. . . do not appear to be any existing prescriptions or programs to train teachers of high risk students. Some guidelines for such training are badly needed.

In many ways, this dissertation and experiment are addressed to developmental teachers' frustrations. It seeks to provide quantitative

and comparative data, if only for one discipline (library skills) and for one set of circumstances (deciding whether to use self-instruction or classroom teaching). Many such experiments need to be performed to build a knowledge base on developmental students (Roueche, 1968, abstract):

. . . The community college has based its remedial programs on unproved assumptions rather than on research findings. Colleges are faced with a need for program evaluation, recruitment and assignment of competent teachers, clarification of objectives, identification of remedial students, and experimentation with teaching methods.

But perhaps Pat Cross (1976, p. 3) has most clearly delineated the impact and significance of developmental students on community college instruction, which of course, includes the teaching of library skills. Her remarks to the American Association of Higher Education best summarize the underlying rationale for including developmental students in this experiment. To that end, the writer appreciatively concludes this section with some of Cross' more germane and cogent observations:

. . . Finally, I think that New Students, the designation that I reserve for low academic achievers entering open admissions colleges, have done a great deal to force the instructional revolution. Without knowing it, students with poor academic backgrounds have challenged college instructors to look at their ability to teach. Traditional college students who are selected for their motivation and skills for academic work are no challenge to pedagogy. They seem to teach themselves with a little direction in the form of assignments and modest incentives in the form of grades. But community college teachers who met the first wave of New Students were first distressed and then challenged when they first discovered that the traditional, information-saturated lecture was falling on deaf ears of traditional students, too, but their study outside of class masks the ineffectiveness of the classroom.) In any event, it appears that some of the most exciting responses to the pressures for instructional reform are being made in colleges where New Students are heavily represented. Necessity is the mother of invention.

Media Research and Learning Theory

Ambrose Bierce (1957) once described learning as the "kind of ignorance distinguishing the studious," but for the purposes of this study, a less sprightly, more serious definition is required. Psychologists have come to refer to learning as a behavioral change, occurring somewhere in the organism in the form of neural, biological, or other physiological changes (Gage and Berliner, 1975; O'Connor and Elkind, 1971; Gagne, 1970), but for those engaged in the educational sciences, this poses problems. Since learning is an internal activity and cannot be seen, one must infer that this process has taken place from conditions surrounding the organism's performance. Hence, educators must define learning in operational terms. This might include variables such as the subject's number of correct responses, the number of errors, the speed of response, or the amount of time required to reach a particular level of proficiency (Munn, Fernald, and Fernald, 1969). The writer necessarily defines "learning" in its operational context for the experiment: the number of correct responses on the library skills tests.

An impressive array of teaching methods has been used over the ages, and at least one study identifies seventeen separate models - ranging all the way from "inductive teaching" to "operant conditioning" (Joyce and Weil, 1972). However, there still appears to be great disparity between research in educational psychology and its application to educational practice. A recent textbook claims, that "in large degree, the worlds of teaching methods and learning processes are still separate" (Gage and Berliner, 1975). An earlier writer confirmed that point of view: what teachers need most, he said, is an understanding of the

"relation of the processes and principles of learning to particular contents such as those required by the curriculum." Further, "the laws of learning still provide no guidelines as to how mathematics, reading or science are to be taught" (Elkind in O'Connor and Elkind, 1971). In the same train of thought, Gage and Berliner (1975) openly admitted that the teacher's teaching had not been directly related to the learner's learning. Nonetheless, better to understand and to improve teacher activities, they proposed tracing the various teaching methods to specific learning theories. It is in this same limited and speculative context that the researcher offers possible explanations for choice of teaching medium through learning theories.

This study proposes to determine if library skills can be taught more effectively through traditional classroom teaching or through a video self-instruction unit, and whether traditional or developmental students would perform comparatively better on a library skills post-test as a result of exposure to either of those methods. Since traditional classroom teaching - that is, lecture-discussion, will be used as one of the treatments, it is necessary to examine prior research on its effectiveness.

"Classroom teaching" - also referred to as "classroom discourse" - is defined in most educational psychology texts as a combination of methods; typically, it will consist of a brief lecture, which often shades off into discussion, and in some cases, proceeds to self-directed study. The latter element is more common in the lower grade levels than in colleges, however, as elementary school teachers often require independent "seatwork" of their students (Gage and Berliner, 1975).

Flanders (1970) determined that teaching behavior was consistent in most "classroom teaching" situations: the pattern of instruction involved lecturing for two-thirds of the class period, with the remainder devoted to question-answer recitation based on the textbook assignment. "Classroom teaching" so defined appears to have been in existence as early as 1900, and of course, is the prevalent mode of instruction today (Hoetker and Ahlbrand, 1969).

A significant consideration in choosing the "classroom teaching" or lecture-discussion method is determining whether the teacher's personality allows him to use it skillfully and with ease (Gage and Berliner, 1975). Regrettably, little is known about instructor characteristics as they relate to effective instruction, but McKeachie (1969) provided succinct comments on the state of the art. First, "faculty members who are attentive to individual students are more likely to be effective teachers than those less attentive." Secondly, "the instructor has a major effect on personalization through his influence on group norms in the classroom and college." Finally, "we know very little about professors' views of themselves and their roles and the effect of different role concepts upon personalization of instruction."

Fortunately, despite this variance in instructor personality, students generally can learn in the traditional lecture discussion setting, mostly because principles of psychology are at work. Gage and Berliner (1975, p. 454) masterfully describe the process:

. . . From the operant conditioning point of view, one person's remarks serve as discriminative stimuli for another's responses, which are then reinforced by the behavior - verbal or nonverbal - of other students or the teacher.

The second method of instruction to be used in this experiment - self-instruction - probably began sometime in the 1920's, when the testing movement forced teachers to take account of individual differences (Gage and Berliner, 1975). It soon became apparent that brighter students were capable of learning more than average or low-ability students, and that some method of instruction should be developed to accommodate the needs of all. Never has this been more applicable than in the community college, where "individualized instructional approaches are necessitated by the unparalleled diversity in the contemporary two-year college student body" (Roueche and Kirk, 1973).

Self-instruction has taken on many forms and variations, among them B. F. Skinner's "programmed instruction," typically automated, cybernetic, and based in operant conditioning (Stolurow, 1969); F. S. Keller's Personalized System of Instruction (PSI), usually individually paced, mastery oriented, and supplemented with traditional instructional procedures (lectures, filmstrips, demonstrations) (Gage and Berliner, 1975); and "self-directed" study, which is the form of self instruction to be used in this experiment.

Gruber and Weitman (1962) described self-directed study in this fashion: the course structure is preserved, but the student's attendance in formal classes is generally reduced. In a well known, five-year study at Antioch College, researchers found that achievement and retention of material were approximately equal for the experimental self-directed study groups and for the groups taught by ordinary classroom teaching (Baskin, 1961). Since then, any number of studies have been conducted to ascertain the relative effectiveness of self-instruction as compared to other methods.

Homme (1965) found that self-instructional techniques provided a positive atmosphere for low achievers in reading and mathematics. McDonald (1973) compared conventional and multi-media self-instructional methods in teaching remedial English at an urban community college; students in the self-instructional group scored significantly higher on final skills examinations than did students in the control group. In still another application, self-instructional materials were compared with other instructional approaches concerning student performance on tests of the National Board of Medical Examiners. The researchers concluded that "the student learning through self-instructional materials is superior to learning other types of instruction" (Stritter, Burford, Johnson, and Talbert, 1973).

There are many who would disagree with the far reaching nature of the medical researcher's claims. Costin (1972) commented, ". . . evidence fails to support popular derogation of the value of lectures in college and university teaching." McKeachie (1969), Gage (1960), and Gage and Berliner (1975) have all posited the view that teaching methods do not account for significant variance in educational outcomes. Finally, on the basis of available research, the effectiveness of a particular method or medium is more dependent on the nature and quality of the message than upon the characteristics of the channel of communication (Twyford, 1969).

Gagne (1969) theorizes that future learning is dependent on past learning; it is internal, neural, and a highly idiosyncratic event. Schneir (1974) corroborates that point of view: "Each learner's prior conditioning or learning background will influence the amount, frequency,

and type of reinforcement and punishment which will be most effective, as well as the method of stimuli presentation (e.g., visual, auditory)."

It is well known that television receiver penetration in the United States is now 95 percent and Americans spend an average of almost six hours per day watching television (Bogart, 1972). With such near saturation, and especially given the fact that those families without sets are more likely to be eccentrics than economically deprived individuals (Bogart, 1972), the writer postulates, one, that most college students are conditioned to television, and two, that students will be able to learn through some form of television instruction. In developing a program for management training, Golde (1973, p. 20) came to much the same conclusions about his students:

. . . Television viewing is already a deeply ingrained habit among Americans - managers included. We find that managers naturally regard a videocassette training program in light of their well established TV habits and expectations.

Hilgard (1960) suggests that the learner should be active rather than passive. According to McLuhan (1964), television viewers are active: the rapidly changing series of light images on the cathode ray tube compel audience involvement and participation, and create a favorable learning environment.

Still another positive connection between television and learning is related to television's ability to synthesize and organize information. As Walker (1970) explained, "Properly designed ITV (Instructional Television) is highly structured, direct in its approach to the objectives, and essentially free from irrelevancy."

In the community college, where there are considerable numbers of low-achieving students, the qualities of instructional television as described by Walker (1970) - high structure, clear objectives, relevancy - could be especially helpful; for as Gage (1960) observed, low-achieving students are notable in their inability to extract the essential from the extraneous or irrelevant. Perhaps instructional television could help developmental students overcome this shortcoming.

Another important consideration is that television has had vast support from the research establishment as a legitimate instructional device for students at all ability levels. Early in ITV history, studies at Penn State were conducted, and in 29 out of 32 controlled comparisons in seven different courses, there were no significant differences in achievement between students taught via television and those taught conventionally (Ford Foundation, 1961). Svobodny (1969) has compiled sixty-two abstracts describing research and experimental teaching, where television and film methods were used in college instruction was concluded to be as good as, or better than, conventional instruction. More recently, and more to the point of this experiment, articles have appeared in Community and Junior College Journal in support of television instruction (Evans, 1976; Zigerell, 1976). Perhaps Perrin (1976, p. 7) summarized television's impact best when he wrote:

. . . Instructional television has a tremendous potential. It can motivate, excite, and involve large numbers of people of all ages. It can transport the viewer to any location in the past, present, and future, in the realms of fact or fiction, reality or fantasy. It shares the most ideal viewing position with every viewer. It can make visible to all at the same time

what would normally be visible only to one, such as the image from a microscope or a telescope. It can alternate close-up and distant views, using the zoom lens to make smooth transitions. Abstract concepts can be concretely visualized by animation. And videotape allows these experiences to be recorded and accessed at a later time, or replayed repeatedly at normal or varied rates of playback speed, for analysis of an event.

With this helpful lead-in statement from Perrin, the writer now turns to reporting some of the numerous studies that have been completed in support of video, specifically the videocassette, which takes on the essential configurations of television and adds a few dimensions of its own.

Gordon and Falk (1972) refer to the videocassette as the "ultimate" in recording instrumentation. In expensive, re-useable, easily loaded, and convenient to store, the videocassette, in their estimation, will fit into the ideologies of all instructional camps. Videocassettes have been successfully used at all levels and in diverse subject matters. Kraemer (1973) reported successful use of video in a M.D. program; Dietrich (1974) used videotapes to motivate junior high school students to read; Utz (1973) and Gormley (1974) both expressed satisfaction for videotape instruction of developmental type algebra at the community college level. Kaufman (1974) revealed that videocassette technology had enabled a Virginia public television station to send programs to public schools that could not receive its signal. Moreover, there have been many examples of videocassette use in library instruction applications; these are restricted to the section of this chapter entitled "Research in Library Instruction." Finally, spokesmen for Bell, Time-Life, IBM, and other companies have confirmed that video-systems are

cost-effective as training media (O'Sullivan, 1975), and there is every reason to believe that this phenomenon would have transference to community college education.

Gabor (1973) cited the general advantages of videocassette instruction: first, it has the potential to expand learning beyond traditional time-locked curricula; second, it gives the student (or class) control over the actual running of the program by providing for fast forward, reverse, and freeze frame capabilities; third, it allows instant viewer response and machine feedback for reinforcement and reward in learning; fourth, it is applicable to both self-instruction and classroom learning situations; and fifth, cassettes are portable and easily stored.

There are so many advantages to using the videocassette as it exists now that it is hard to imagine more productive applications. But in community college education, where individualized instruction is mandated by diverse ability levels in the student population, the videocassette can make extensive contributions. Roueche (1973) recommended that "instruction should accommodate individual differences and permit students to learn and proceed at their own paces." To accomplish this goal, there is much research documenting the effectiveness of video self-instruction. In an experiment using self-instructional learning packages in a remedial English program at an urban community college, McDonald (1973) found that students in the self-instructional experimental groups performed significantly better than students receiving conventional instruction. When Phillips and Utz (1973) used single concept self-instructional videotapes to teach remedial algebra at the community

college level, they discovered that completion rates were 50 percent higher than in traditional courses, and learning ranged from 11 to 18 percent higher. Even at the four year level, Volker and Simonson (1975) reported satisfactory use of "TeleTutorial" self instruction in teaching an undergraduate media course. Last of all, Jandt (1974) found that in some cases, self-instruction video modules could create a more natural environment for learning than could classroom television sessions.

The cumulative weight of the literature cited in this paper is the basis for the researcher's choice of teaching techniques for the experiment. Regrettably, citations on developmental and degree-program students are scant in terms of learning theory and media selection.

What is known, however, is that discussion methods are more appropriate for bright students than for less able students (McKeachie, 1969), certainly justifying the choice of lecture-discussion as one method in this experiment.

Two studies report more specific results: Walker (1970) found that instructional television in a large class setting would enable lesser ability students to achieve at a higher level than in a traditional lecture-discussion session. Upon testing one type medium across a wide spectrum of student ability, Taylor (1969) concluded that, ". . . for low ability students, a combination of videotaped interaction and live interaction is the most effective organization for those investigated."

But by and large, the review of the literature indicates that no major experiments have been conducted which restrict population to community college students, define treatment as method of teaching

library skills, and determine the comparative effects of treatment on both high and low ability students. In the case of this particular study, traditional and developmental students are compared, first, because they are the community college's primary constituencies (Roueche and Kirk, 1973), and second, because both groups need to learn library skills (Foster, 1974).

Research in Library Instruction

According to L. C. Pugh (1970), little activity occurred in the development of library instruction programs in the United States until after World War I. Pugh identifies the period between the two wars, however, as a wellspring of new instructional activity in university libraries; Maryland began this work in 1919, followed by Columbia University in 1933, the latter launching library instruction courses for individual disciplines. A slight variation in technique appeared in the 1950's, when many students were taught library skills by "tutor librarians." In the last twenty years, library instructional methods have fanned out to include, in Pugh's words, both "the traditional approach, involving the lecture, guided tour, and subject orientated study" . . . and "the use of modern teaching methods and aids." Pugh did not, however, attempt to discuss the efficiency or effectiveness of any of the techniques, or to spell out exactly what the "modern" techniques were.

In recent years, growth in library education programs has been restrained. This slowing trend appears traceable to two factors - first, an unprecedented information explosion creating large, unwieldy

libraries, and second, increasing numbers of students to instruct at diverse ability levels (Nance, 1969; Anspaugh, 1974; Schwarz, 1970; Brown and Carter, 1970; Passarelli and Abell, 1974). Ironically, contemporary students at all levels have shown an exaggerated view of their abilities where using the library is concerned (Lubans, 1974).

As if this were not enough of a stumbling block, there are additional complications hindering further development of library education. At least one writer has suggested that students are preconditioned to low expectations of library services (Newman, 1969). Still another decries the widespread student practice of using libraries only for study halls (Wilkinson, 1974). But the most pervasive difficulty confronting librarians who wish to teach bibliographical skills is a commonplace student reluctance and apparent lack of interest (Beardsley, 1974). If a recent survey at the University of Colorado is typical, a self-satisfied 49 percent of students would claim adequate preparation for finding information in the library. In the same study, only about 40 percent of students would pursue "conveniently scheduled" courses or clinics in basic library use (Lubans, 1974).

It is important to examine how librarians have attempted to teach against this background of student attitudes and proclivities. The literature shows immense concern for discrimination between library "orientation" and "instruction," the former being considered an introduction to staff, physical plant, and services, the latter being defined as information given in some detail on specific bibliographical sources (Lynch, 1973; Stoffle and Bonn, 1973). Lynch believes that many college faculty members do not understand the distinction, and as a result,

their students are shortchanged in learning about the library. Accordingly, there is consensus in the literature that faculty-library liaison work is essential to the development of sound library instruction programs (Starkey, 1974; Anspaugh, 1974; Tevis, 1974; Passarelli and Abell, 1974; Beardsley, 1974; Larson, 1971; Lynch, 1973). The literature routinely speaks of ways to "provide encouragement for the faculty to use the collection in their teaching" (Larson, 1974), and on the whole, expresses a sincere desire to meet the needs of the library user. "Service to the faculty is essential in order that they may serve the students" (Beardsley, 1974).

From faculty understanding of the librarian's mission to instruct, invariably comes an invitation to speak - that is, "the instruction is done by the librarian who appears, books in hand, as a guest lecturer for an hour in the classroom" (Larson, 1971). This opportunity is most generally received by the librarian with gratitude, for it offers a far superior alternative to any of the last-resort techniques - walk-through tours, self-guided tours, brief audiovisual presentation, or the mass orientation (Stoffle and Bonn, 1973, p. 131):

. . . A significant aspect of 'Instruction through existing classes' is that it gets the librarian into the classroom and legitimizes his teaching role since students often connect expertise with the classroom situation. Furthermore, librarians and faculty have a chance to develop mutual professional respect by working together.

There is yet another reason for classroom-centered library instruction. It appears that library instruction without motivational need may be a "waste of time and effort" (Tevis, 1974). First year students tend not to recognize the complexities of the information

network, the many types of bibliographic control, even the simple methods of searching periodical indexes; they do not anticipate problems in using the library. "Therefore instruction should be left until it can be correlated with course work" (Beardsley, 1974). Another librarian corroborates this simple truth (Millis, 1973, p. 65-66):

. . . Learning follows knowing that one wants to learn. Showing students around the library or lecturing to them about books that are in the library will not hook them intellectually and mold them into being library users. The tours and the tours de force of the past have not reached students.

Apart from the broad problems of library instruction discussed above, community college librarians face additional difficulties. They must serve institutions with atypical qualities and characteristics. Newman (1972) writes that certain peculiarities common to the community college - rapid student turnover, the number and variety of educational programs in the college, the diversity of student background and academic preparation, and the dynamic nature of community college libraries - combine to require a flexible, up-to-date, and responsive library instruction program. He reports having experimented with videotape, among other techniques, to meet those difficult objectives. Larson (1974) stresses the same point, insisting that there is a far narrower instructional base for use of the library in the community college than in traditional liberal arts institutions. He envisions librarians generating use of their collections through required coursework.

Other writers point out that community college libraries must serve those who are not typical "book learners." As President of the College of San Mateo, Bortolazzo (1969) wrote that many vocational

technical students were nonverbally oriented, and 50 percent of the students could not read textbooks effectively. Nance (1969, p. 92) confirmed that feeling:

. . . We must be able to present information by the sensory mode and technique most suitable for the user. The simple truth is that potentially very good students are just not oriented to visual symbolic forms of information input.

Library usage statistics tend to substantiate this theory that many students, particularly those enrolled in vocational courses, are not accustomed to using print materials. Hostrop (1968) learned that 45 percent of the courses at the College of the Desert brought about no library loans, and conversely, that 4 percent of the courses accounted for almost 80 percent of the loans. As early as 1959, Knapp studied Knox College, where library use could be connected only with one-third of the total course offerings. Library circulation figures for J. Sargeant Reynolds Community College in the past year show the same lopsided slant. This writer analyzed monthly reports of the JSRCC Learning Resources Center for 1975, and learned that certain liberal arts courses - English, history, sociology, and psychology - habitually accounted for more than 60 percent of the book checkouts. Yet, the institutional enrollment was consistently two-thirds or more occupational-technical students during the same period.

On the whole, the literature recognizes a shortcoming in the service records of community college libraries. Writers by the score have bewailed libraries' general insuitability for use by nonverbally oriented students, but Kosaki (1969, p. 33) best described their attitude when he wrote:

. . . It seems that one of the special challenges of . . . community colleges is to make the library a familiar and useful place for the so-called technical-vocational students. Too often, libraries, like churches, are attended by those who need them the least.

Fortunately, many libraries have recognized their inadequacies to the point of translating concerns into action. The literature documents instance after instance of institutions seeking alternatives to the traditional print-oriented method of library instruction. For example, in a pre-college workshop in library skills for minority students at Fort Lewis College, Shippy (1971) reported using the programmed approach. Lesson plans stating objectives, listing reference sources needed, and suggesting a procedural sequence were prepared for each day's work. Said Shippy, "Liberal use of visual aids was one of the imperatives of instruction in library skills."

At Pasadena City College, officials completely revised their course on basic library procedures, largely from their awareness of differences in student needs: "we have almost completely eliminated the lecture approach . . . and have substituted an individualized multimedia approach" (Brown and Carter, 1970). Elsewhere, in a library enrichment program for "open admissions" students at Brooklyn College, Breivik (1974) found it necessary to use behavioral objectives, and to teach her material entirely within the confines of a remedial writing course. In another case, Dudley (1974) reported moderate success in a self-paced library skills program at the University of California, Los Angeles. To provide effective instruction for all new patrons, UCLA's library developed a self-directed program of twenty assignments, requiring only ten to fifteen hours of student time. In still another

instance, Newman (1972) experimented with a number of approaches to library instruction at Kirkwood Community College. In order to achieve communication with students at that library, the staff settled on a slide show and brief lecture, supplementing both techniques with kits in self-instruction. Finally, Heroux (1974), based on his experience as a reference librarian for the Naval Underwater Systems Center, concluded that motion pictures were most conducive for library use instruction.

And so the literature proceeds, citing all manner of varied programs and methods for library instruction. In this parade of personalized accounts, however, use of videotape is being reported by librarians with increased regularity in different settings, and diverse ability and grade levels. For one, LeClerq (1974) enthusiastically described videocassette circulation in public libraries, touting the fact that the playback videocassette recorder could be used for practical self-instruction. In the same article, LeClerq (1974, p. 14) disclosed that the libraries at the University of Tennessee, the University of Maryland, and the College of Dupage had successfully used videocassettes for independent study "free university" programs, and for assigned study. She wrote:

. . . The delivery systems utilized at these institutions provide for a one-to-one relationship between the student and the medium - a study carrel equipped with either a vc playback unit, or a TV monitor connected to a videocassette channel.

In another case, Walsh (1974) used videotape for educating library users at a junior high school in Illinois. To introduce the students to the different types of reference tools, and more significantly, to their location in the library, she selected videotape because

it could depict motion; using student actors, Walsh found that videotape could show the characters walking in the reference area, and would therefore establish the location of the titles being mentioned.

Documenting the practices in five California community college libraries, Larson (1971) proposed and outlined a model videotape for library skills instruction. Immediately thereafter, students at Saddleback College (California) produced such a tape. While no specific statistics can back up her claim, Larson felt that the student-produced tape provided "a high level of library learning for the participants in the project and a flexible teaching aid," and further, that the videotape would be especially useful for the heretofore neglected extension or evening student.

In yet another application, Kiersky (1975, p. 384) developed a series of nine-minute videotapes to transmit library information to her patrons at New Jersey's Airco, Inc. Central Research Laboratories:

. . . Videotape offers the advantage of permitting your message to be repeated as often as desired. . . It is a medium for instructing viewers on how to do something and also can be a motivating influence upon viewers to do something.

In a final instance of videotape use for library instruction purposes, the investigator turns to the work of Foster (1974) at Hunter College, whose goal was to produce a tape that would be helpful in teaching disadvantaged students. Regrettably, no experiment was conducted to validate the utility of the sixteen minute tape, but Foster did market her effort to Sony for rental to other college libraries. She concluded, "In library instruction, the full potential of media as a message is yet to be explored."

Foster's remark is not to be taken lightly. Library-related journals abound with what one pundit once called "how-I-run-my-library-good" literature, and there seems to be consternation in all quarters concerning the actual lack of empirical studies as related to library instruction. Beardsley (1974), Schwarz (1970) and Tevis (1974) have, among others, dolorously admitted that there is little hard research in comparative techniques of library instruction. Stoffle and Bonn (1973, p. 133) seem to have summarized the problem best:

. . . Quantitative measures of the successes or failures of particular methods of instruction have not been generally developed and informal evaluation based on student and faculty comments as well as staff observations are the most common techniques currently used. Ultimately, however, libraries agree that some more "scientific" or valid evaluation techniques must be developed for library instruction to become an established part of public service programs.

No matter how pronounced the inadequacies of existing library literature, there does seem to be agreement on two principles - principles which may enable those pondering new library instructional programs to build from a more solid foundation. First, only curriculum-centered library instruction will "produce the benefits that the dynamic and expanding community college demands" (Larson, 1971). Secondly, certain basic content must be taught in almost every library instruction program: (1) how to obtain information from printed materials, including use of card catalog and periodical indexes (Breivik, 1974); and (2) using discrimination among research tools (Knapp, 1959; Larson, 1971).

Bortolazzo (1969, p. 4) offered community college librarians one of the most hopeful positive remarks to be found in recent literature. Describing the community college, he wrote:

. . . It is alive, vigorous, vital, going off rapidly in all directions - literally. Sometimes it goes kicking and screaming, vociferously wrong, but making the healthy mistakes that come from venturing, from activity rather than passivity.

The design and intent of this experiment/dissertation are based largely on the foregoing review of the library literature: first, that few, if any, empirical evaluative studies have been done comparing different methods of library instruction; secondly, that videotape has been successfully used in many library applications, which should be subject to statistical validation; finally, that only positive change can come from experimentation.

Summary

The objectives of this experiment were to determine whether library skills could be taught more successfully by the traditional lecture or by a video self-instruction unit, and to assess if either of these methods were comparatively more effective when used in ability level groupings. An extensive review of Current Index to Journals in Education, Library Literature, Resources (Research) in Education, Education Index, Reader's Guide to Periodical Literature, and Dissertation Abstracts indicated there had not been a study empirically comparing methods of library instruction for community college students. However, the topics most directly related to the study's need, purpose, and experimental design were fully researched for whatever bits of information could be used in the formulation of hypotheses. These topics were 1) community college developmental programs; 2) media research and learning theory; and 3) research in library instruction.

The need for the study was corroborated and justified by drawing from the literature in all three areas. Authorities in the library sciences unanimously agreed that there was little hard research in comparative techniques of library instruction (Beardsley, 1974; Schwarz, 1970; Tevis, 1974; Stoffle and Bonn, 1973). As for the choice of subjects participating in this experiment - both developmental and degree-program community college students - there was wide agreement in the educational literature that appropriate teaching techniques had not been refined or adequately researched.

Roueche (1968), Moore (1970), Roueche and Kirk (1973), Chadbourne (1969), and Cross (1976) concurred first, that community colleges badly needed program evaluations as based on their attempts to teach students with such diverse ability levels, and secondly, that developmental programs, particularly, were based on unproved assumptions rather than research findings. Cross (1976), calling for further experimentation and instructional reform, observed that the lecture method, commonly used in community colleges, was unsatisfactory for traditional as well as lesser-ability students. Finally, from the realm of media research and learning theory, scholars have suggested that better to understand teacher activities, research should attempt to trace teaching methods to learning theories (Gage and Berliner, 1975). In conclusion, the sum of the literature indicated a need for many, many experiments - first, empirically comparing techniques of library instruction; secondly, analyzing teaching techniques for community college students; and third, comparing teaching methods with students' actual learning. This study was the nexus of the three needs.

It should be stressed that for the purposes of this experiment, learning was defined only in an operational context, that is, the number of correct responses on the library skills post-tests. Copious citations indicated that learning must follow motivation (Millis, 1973; Stoffle and Bonn, 1973; Gagne, 1969; Gage and Berliner, 1975). Librarians wrote that student motivation could be provided by having library instruction centered in the classroom and correlated with course assignments (Tevis, 1974; Beardsley, 1974; Larson, 1971). In this experiment, all library instruction originated from the teacher, from his classroom, either in the form of an in-class lesson, or an outside-class assignment.

The teaching methods used in this experiment were based on findings in the literature. While there was scant evidence favoring the superiority of one method over another in teaching library skills (Beardsley, 1974), librarians, with increasing regularity, reported successfully using videotape (LeClerq, 1974; Walsh, 1974; Larson, 1971; Kiersky, 1975; Foster, 1974). In disciplines other than library skills, Gordon and Falk (1972), Kraemer (1973), Gormley (1974), Kaufman (1974), Perrin (1976), Evans (1976) and Zigerell (1976) concluded that video instruction was as good as, or better than, conventional classroom teaching. Further, students at all ability levels tend to be conditioned to television (Golde, 1973), and in at least one instance, videotape has been shown effective in teaching low ability students (Taylor, 1969).

"Classroom teaching" was selected for a control group for the experiment because it is the most widely used form of instruction (Hoetker and Ahlbrand, 1969). For the study, videotape instruction was modified to become video self-instruction, largely due to comments by

Moore (1972), Roueche and Kirk (1973), and Costin (1972). These writers concurred that instruction should accommodate individual differences and permit students to learn at their own rate.

Hypotheses in this study were based on the literature. Since so many positive commentaries on videotape and/or a self-instruction unit appeared throughout the literature (see citations on p. 43), it was hypothesized that a video self-instruction unit would be at least as effective as the normal classroom lecture for teaching library skills.

Finally, it must be stressed again, that the study was designed to address itself to the common frustration expressed in this review of the literature - the desire for more empirical and evaluative data on teaching methods (Beardsley, 1974; Stoffle and Bonn, 1973; Roueche, 1968; Roueche and Kirk, 1973; Gage and Berliner, 1975). The study sought to provide quantitative and comparative data, if only for one discipline (library skills), one type of student (community college students), and one set of circumstances (deciding whether to use a video self-instruction unit or classroom teaching).

Chapter 3

RESEARCH METHODOLOGY

This study tested the comparative effectiveness of two methods of library instruction, one, the traditional classroom teaching mode, and two, self-instruction by a videocassette, by conducting an experiment on a group of developmental and degree-program English students at a suburban community college.

Population and Sample

The population in this study was freshmen students drawn from developmental and degree-program English composition classes of the suburban campus of a multi-campus community college.

The sample was composed of students in 14 English classes (seven developmental, and seven transfer-oriented degree-program), whose instructors had agreed to take part in the study. Of the 120 subjects remaining until the experiment's conclusion, 60 were full or part-time students in developmental English (Verbal Studies), and 60 were full- or part-time students in the degree-program course, English Composition. Verbal Studies was a developmental course in composition for students who needed to improve their writing skills to enter regular college curricula. Students could re-register for this course as necessary in subsequent quarters until they completed the course objectives. English Composition was the first of a three quarter course sequence, stressing the preparation of research papers and understanding of literary criticism. Both these courses were chosen because library skills could

logically be taught in either, without significant interruption of the normal course sequence.

Students in both courses were taught through a variety of methods prior to the experiment, including classroom teaching, laboratory experiences, and self-instruction. The developmental English students utilized a writing laboratory, and the regular degree-program students had access to the college Learning Lab. Therefore, the use of classroom teaching and/or a video self-instruction unit, as in this experiment, was not an unusual occurrence for students in either group.

According to data provided by the participating instructors, who had full access to most student records, the developmental students in the study were first generation college students from lower-income families. Nelson-Denny reading ability tests had shown that the developmental students' reading levels at the college ranged between the sixth and eleventh grades; the average was eighth grade. More descriptive data was not available, as the college feared a breach of confidentiality.

Testing Instrument

As noted in Chapter 1, the McGraw Hill Basic Study Skills Test, composed of four sections - "Problem Solving," "Underlining," "Library Information," and "Study Habits" - was the source for the test used in this experiment. Instructors at the participating college were experienced in the administration of this test, considered it a viable diagnostic tool, and preferred its format to what could have been developed locally. The researcher therefore sought out information on

the development and validation of the Study Skills Test, to determine if it could be suitably adapted for use in this experiment.

McGraw Hill's Testing Bureau had computed the Kuder-Richardson 20 formula for both forms of the Study Skills Test. McGraw Hill's statisticians used a norming group, totalling about 950 students, of freshmen (and some sophomores) in four-year colleges and universities; two-year college freshmen; and college-bound high school juniors and seniors (see the Examiner's Manual, pp. 29-30). For the Library Information component of the Study Skills Test, the results are shown below.

VALIDATION DATA FOR THE LIBRARY INFORMATION
COMPONENT OF THE STUDY SKILLS TEST

	FORM A (20 items)	FORM B (20 items)
N	945	947
Mean	11.57	12.04
Median	12	12
SD	3.37	3.19
KR-20	.65	.62
Std. Error Meas.	1.98	1.97

Reference: McGraw Hill Testing Bureau.

Parallel-form estimates of reliability for the components of the Study Skills Test were unavailable from McGraw Hill. The two forms of the test were combined into a 40 item examination on library skills.

Next, a team of eight members, consisting of developmental English instructors, transfer English instructors, and librarians, closely examined the 40-item combined test. They agreed that the new test was a satisfactory barometer of student skill in using the library,

that the 40-item set of questions covered the content both necessary and suitable for degree-program and developmental students, and that the level of difficulty and depth of coverage in the questions were appropriate.

Of the 40 items on the consolidated test, 26 were directed to the use of the card catalog, Reader's Guide, and major reference sources. Ten items checked the students' understanding of how to use the various parts of a book. The remaining four items were general library knowledge application questions. The literature confirmed and corroborated the need for this type of content to be taught in one-hour library instruction sessions (Breivik, 1974; Knapp, 1959; Larson, 1971). Moreover, the researcher's random discussions with many Virginia Community College System (VCCS) librarians indicated that the same was true in practice. These sources in the literature, comments from within VCCS, and the approbation of the eight-member team at the experimenting college all seemed to confirm the content validity of the test. The new 40-item test was therefore used as the criterion test in all post-testing and delayed post-testing activities in this experiment.

The content of the video self-instructional package, as well as the "classroom teaching" module, was developed from questions posed in the consolidated Library Information Test. The two teaching methods sought to introduce, explain, and summarize facts pertinent to use of the card catalog, periodical indexes, and major reference tools, precisely the content from which the 40 test items were drawn. In this sense, the Library Information Test was related to the experimental

treatments; the students' ability to learn by the two treatments was therefore measured by the resulting test scores.

Developmental and Production of the Videocassette

Every step was taken to insure the development of a quality videotape with high content validity that could teach directly to the content of the combined Library Information Test.

The videocassette was produced and directed by the researcher for use in the experiment (see Appendix C for a copy of the script). The team of instructors and librarians who had assisted in examining the Library Information Test were routinely consulted in the development and evaluation of the script. Their editorial advice figured heavily in the final product.

The tape was 23 minutes in length. Content revolved around use of the card catalog, periodical indexes, and reference tools, as well as proper use of the parts of a book. Ample rationale was found in the literature for including these topics in the tape: Knapp, 1959; Larson, 1971; Breivik, 1974; and Foster, 1974. Moreover, the researcher examined the production techniques in Foster's videotape, and found themes and audiovisual effects similar to those used in the experimental tape.

The point of view in the tape was significant in that it conformed to certain elements of learning theory. So that students might closely identify with the tape's content, the researcher chose, as a central character, a student completely uninitiated in library skills. The tape began with scenes of students sitting about in the student lounge. The camera then focused in on a young man, who was

obviously not making the most of his time. The narrator of the tape spoke to the student, gently encouraging him to get started on his term paper project in the library. In the ensuing scenes, the camera followed the student to the library, where it looked over his shoulder as he used the catalog, Reader's Guide, and so on, with the narrator giving the student helpful suggestions at every new turn. The tape was filmed entirely in this manner, following and detailing the student's progress through the various steps of term paper preparation.

The videocassette was produced exclusively on location. The advantage in using a locally produced tape in the experiment was to reduce what might have been abstract content to real and understandable situations. That is, in this tape, students could see the actual card catalog in their own library, being used by actual students. Moreover, locational information, specifying the relative positions of the catalog, periodical indexes, and major reference tools, was easily established within this format.

Special effects were chosen in an attempt to highlight key points and reinforce student learning. Examples of this were: (1) split-screen shots of catalog cards and the library shelves, with arrows pointing to the corresponding call numbers on each; (2) shots fading from entries in the Reader's Guide to the periodicals actually cited; (3) printed messages, repeating what had been seen on the screen, and edited into the tape at frequent intervals; and (4) wipe, fade, and dissolve camera shots to emphasize additional points in other areas.

Because of the importance of color in the subject matter being taught, it was necessary to use color in the production of the tape.

Heroux (1974) wrote:

. . . Color . . ., many psychologists theorize, neither aids nor hinders the learning process. I question this theory unless the viewers are color blind or see the world in shades of black and white.

In library use instruction, color has educational value for its identifying power. For example, the Reader's Guide could be recognized by its dark green hue, while volumes in the Essay and General Literature Index could be quickly found by looking for bright red covers. The videocassette in this experiment used color, as such, to indirectly aid the learning process.

The tape was designed for use only at the institution where the experiment was conducted. However, the videocassette could be adapted for use at other colleges.

Finally, it should be noted that the researcher's videocassette was used in a Winter 1976 pilot experiment. Students scored an average of three times as high on a library achievement post-test than on their pretest after exposure to this tape. This may demonstrate something of its teaching value, not to mention specific studies that have supported the use of videotape in general (Gordon and Falk, 1972; Kraemer, 1973; Utz, 1973; Dietrich, 1974; Gormley, 1974; Gabor, 1973; others).

The Pilot Study

In an effort to refine the experimental procedures in this study, the researcher conducted a pilot study at the same institution in the 1976 Winter term. Three intact classes of developmental students were exposed to library instruction by three methods, respectively: (1) the traditional classroom teaching, or lecture-discussion, method; (2) the videocassette-discussion technique (an inhouse studio-produced video-

cassette shown simultaneously to an entire group on two monitors, then discussed; and (3) the same videocassette assigned to students in self-instructional carrels in the college Learning Resources Center. For reasons not yet fully understood, the attrition rate in the participating classes was quite high. From 61 subjects at the beginning of the pilot experiment, there were only 23 scores available for analysis at its close - resulting in an attrition rate of 62 percent - and such data are, of course, inadequate for detailed statistical tests. The only noteworthy finding was that the 15 subjects in the two video related groups had scored an average of three times higher on the post-test than the pretest. Scores for students in the classroom-taught group were widely distributed, ranging all the way from 0 to 38 out of a possible 40, and the lecturing instructor complained that there was too much content to be covered in the time allowed.

The following modifications and enlargements to the design of the pilot study were made for the new study:

1. The videocassette-discussion group was collapsed, in part to reduce the ambiguities resulting from the pilot study and to provide for a clearer comparison between techniques, in part because fewer treatments would make the new study more manageable.

2. It was decided that developmental students' scores should not be examined in a vacuum. In the new study, developmental students' scores should be compared to a more traditional type of students' scores - degree-program students.

3. To reduce the likelihood of attrition, the new study would be conducted in the fall quarter, when student enrollments were typically at their peak.

4. To give the study more credibility, specifically, by using more subjects, permission would be sought to use multiple sections of developmental and degree-program English courses.

The President of the institution authorized the researcher to proceed with the new experiment, and to collect data when and as needed.

Procedure of the Experiment

At the beginning of the Fall (1976) quarter, and two weeks prior to the experiment, the researcher convened all instructors who agreed to participate in the new study. The rationale, objectives, and operating plan for the experiment were explained in detail.

Fourteen classes (seven developmental English, seven degree-program English) were used in this experiment. Each class was separately randomized into two groups by its instructor, who pulled names from a hat, and assigned students to one of the two methods on the basis of this random selection.

Of each class so divided, one group (the control group) reported to the classroom as usual for instruction in library skills, on the middle day of the instructional week. It should be noted here that the control group could not get access to the videotape used by the experimental group. Test form answer sheets with the names of students assigned to view the tape were kept in the learning resources center; if a student's name did not appear on that roster, he was not permitted to check out the tape.

Of each class randomly divided, the second group (the experimental group) was dismissed for the period in which the control group

received library instruction, and instructed to complete the video self-instruction unit on their own sometime during the same week. It should be noted that the researcher closely monitored the instructors' and students' adherence to the procedures of the experiment.

Instructors also agreed to the limitations placed by the researcher, that the two methods of instruction must operate under certain basic restrictions. First, material in the library skills unit must not be covered prior to the actual experiment, or during the period between the post-test and the delayed post-test. Next, each instructional method must be handled in a way that most nearly approximated normal classroom activity. Third, instructors agreed to teach within the guidelines of the content as specified.

For the groups exposed to the "classroom teaching" method, instructors agreed to limit and shape the content of the lesson to the exact same material as that in the videocassette. Consequently, the researcher permitted them full access to the tape and its accompanying production script. Moreover, it was recognized that in this method, each instructor could be considered a "medium," and the force of his personality, a large part of the operating mode. Therefore, instructors were encouraged to express themselves in a manner consistent with their normal classroom style. Classroom discussion and questions were recognized as an integral part of the traditional method, and were also encouraged. If desired, instructors could embellish their presentations with the chalkboard, overhead projector, handouts, or other media normally used. Finally, since McGraw Hill's standard testing time for each form of the Library Information component of the Study Skills Test

required eight minutes, it was necessary to reserve 16 minutes of classroom time for the newly consolidated Library Information Test. Instructors agreed to limit their classroom teaching treatment to 40 minutes to allow time for the test.

Measures were taken to account for the potential impact of the personality variable in the classroom teaching method. Specifically, a separate instructor was used for each of the groups exposed to the classroom method.

For students participating in the experimental group, video self-instruction, the instructors designated a one week period in which the library unit was to be completed. (See Appendix B for specific instructions given to students.) To carry out this mission, the Learning Resources Center staff accepted the responsibility of individually tutoring these students in the use of the videocassette players. Moreover, the instructors agreed on the researcher's guidelines for viewing the tape. Students were allowed to stop the machine as frequently as desired, and if needed, they could take more than one session to complete the assignment. They must, however, have taken the post-test by the end of the week, and in the allowable testing time of 16 minutes. Members of the Learning Resources Center staff were to administer the tests individually for all the self-instructional subjects, by timing the test for each student, and initialing the completed test form to certify adherence to the time limit.

Studies have documented the tendency of students to forget learned material over time. Koppelaar (1963) and Slamecks (1966) reported a half-life period (e.g., the length of time for retention to

decrease by 50 percent) of approximately 12 days for learned material. Based on these findings, the participating instructors administered the delayed post-test to all students 12 days after the control group's immediate post-test. In the case of students in the self-instructional group, who would be taking the immediate post-test at their convenience anytime during the assigned week, a variation on the 12 day delay was necessary. Specifically, the instructor would measure 12 days from the middle day of the self-instructional period (the same period he taught the library skills unit to the control group), then administer the delayed post-test. Using this method, the delayed post-test for subjects in the self-instructional group would range from 10 to 14 days after the initial post-test. This was an attempt to create an average 12 day delay for self-instructional subjects, that is, the same time span allowed for subjects in the classroom taught group.

Treatment of Data

Of the 242 students who had participated in the study at its inception, only 167 subjects completed the treatments and post-tests, as specified. Table 1 illustrates the attrition rate in each of the four groups in this experiment: video self-instructional developmental students, video self-instructional degree-program students, classroom-taught developmental students, and classroom taught degree-program students. There seemed to be three sources of this attrition: (1) students dropping out of courses during the experiment; (2) students not completing the requirements of the experiment within the prescribed period; and (3) instructor error in the administration of the test to one entire class.

Table 1

Number of Participants and Attrition Rates in the Study

	Type of Student			
	Developmental		Degree-Program	
	Video Self-Instruction	Classroom	Video Self-Instruction	Classroom
Number of Participants beginning of study	52	53	68	69
Number of Participants, termination of study	30	34	50	53
Attrition Rate	42%	36%	26%	23%

For statistical convenience in the treatment of data, it was desirable to create equal cell sizes, that is, equal numbers of subjects in each of the four groups listed above. Since the video self-instructional developmental group had dwindled to 30 subjects, the smallest group at the end of the study, the researcher reduced the other three groups to that size for purposes of analysis. This was accomplished by randomly pulling 30 names from each of three containers, containing the other three groups' scores.

All tests were scored with an optical scanner test-scoring machine.

The resulting data were analyzed by computer, using two-way analysis of variance with repeated measures. The factorial design for the study was a 2 x 2 x 2 configuration, where repeated measures were the two times of testing (the post-test and the delayed post-test). See Figure 1 for a visual representation of the factorial design.

The independent variables in this experiment were teaching method (classroom instruction or a video self-instruction unit), student type (developmental or degree-program), and time of testing. The dependent variable was achievement in library skills, as measured by students' scores on the Library Information Test given as a post-test and/or delayed post-test.

Hypotheses

Hypotheses were written to meet the study's objectives, which were, first, to determine whether library skills could be taught more successfully by the traditional lecture or by a video self-instruction

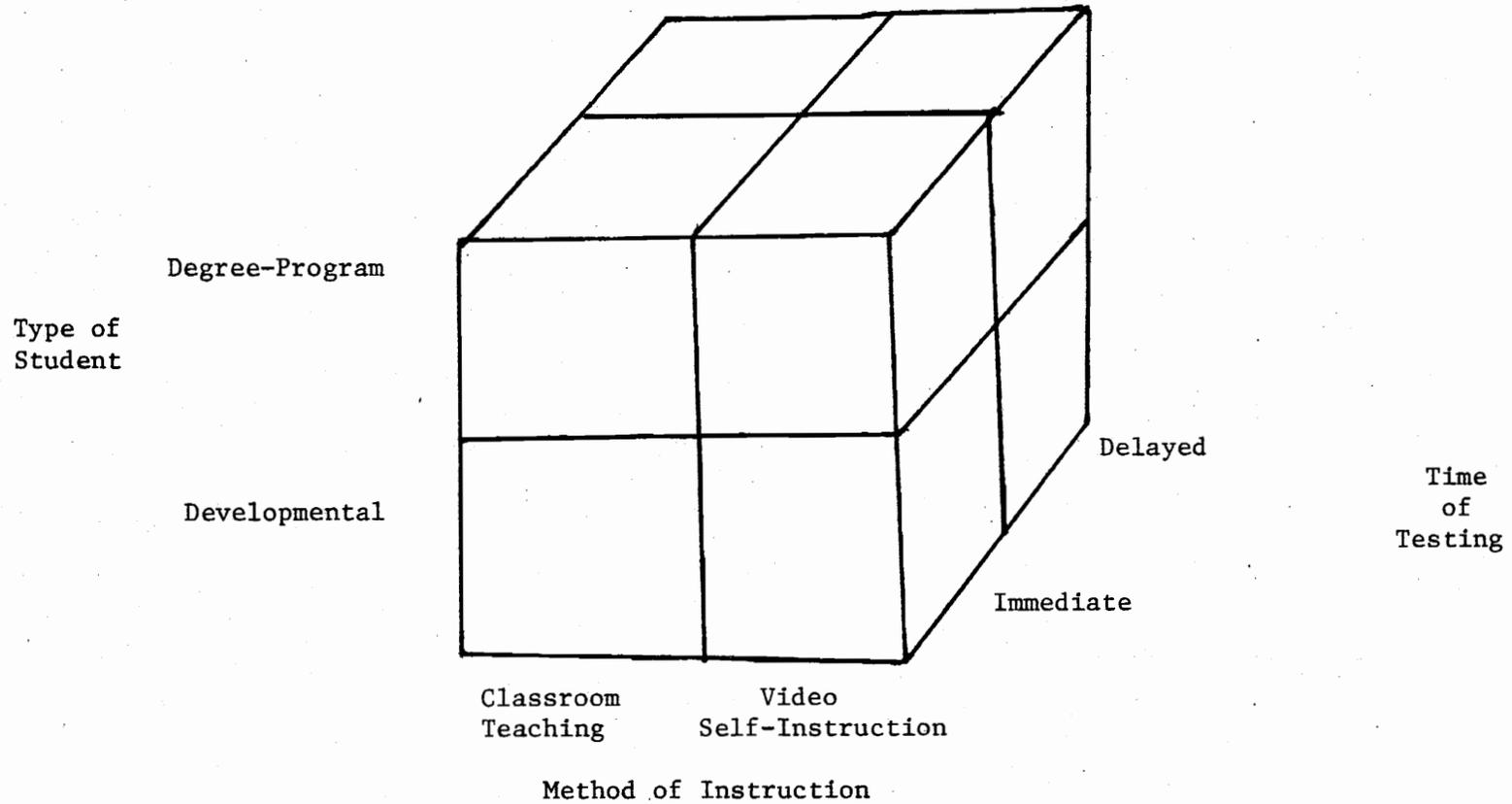


Figure 1. 2 x 2 x 2 factorial design for the ANOVA with repeated measures.

unit, and second, to assess if either of these methods were comparatively more effective when used in ability level groupings.

The following hypotheses were tested at the .05 level of significance:

1. There is no significant difference between experimental and control groups' scores on the immediate post-test.
2. There is no significant difference between developmental and degree-program students' scores on the immediate post-test.
3. There is no significant interaction between treatment effects and type of student on immediate post-test scores.
4. There is no significant difference in immediate post-test and delayed post-test scores.
5. There is no significant interaction between the time of testing and the type of student.
6. There is no significant interaction between the time of testing and the type of treatment.
7. There is no significant interaction among the three variables, time of testing, type of treatment, and type of student.

Summary

This chapter has included a discussion of research methodology used in the experiment, an analysis of the testing instrument that was used, an explanation of the procedures followed, a description of the treatments and their administration, and a statement of the hypotheses.

In Chapter 4, the researcher will present results from the experiment, analyze the data, and test the null hypotheses.

Chapter 4

ANALYSIS OF THE DATA

The objectives of this study were twofold: first, to determine if library skills could be taught more successfully in this experiment by traditional classroom teaching, or by a video self-instruction unit; and secondly, to assess whether either of these methods would be comparatively more effective when used in ability level groupings, specifically, developmental or degree-program students.

To carry out these objectives, an experiment was conducted at a suburban community college, using a group of 137 degree-program English students, and 105 developmental English students. Students in each group were randomly assigned to the two treatments being compared, namely, classroom teaching and video self-instruction.

For statistical convenience in the treatment of data, it was desirable to create equal cell sizes, that is, equal numbers of subjects in each of these four groups: (1) developmental students taught by a video self-instruction unit; (2) classroom-taught developmental students; (3) degree-program students taught by a video self-instruction unit; and (4) classroom-taught degree-program students. Since the video self-instructional group had dwindled to 30 subjects, the smallest group at the end of the study, the researcher reduced the other three groups to that size for purposes of analysis. This was accomplished by randomly pulling 30 names from each of three hoppers, containing the other three groups' scores.

Post-tests and delayed post-tests in library skills were administered to students who had been exposed to each of the two treatments. Of the degree-program students tested, immediate post-test scores ranged from 21 to 39 (out of a possible 40) for subjects in the classroom-taught group. Their mean was 31, and the standard deviation, 5.401. Classroom-taught degree-program students scored from 16 to 38 on the delayed post-test, which was administered 12 days later. In this case the mean was 29.567, and the standard deviation, 5.811.

Degree-program students exposed to the alternative method of instruction, video self-instruction, scored from 18 to 38 on the immediate post-test, resulting in a mean of 29.767, and a standard deviation of 4.621. This same group scored from 14 to 39 on the delayed post-test; in this case, the mean was 28.333, and the standard deviation, 6.183.

Of the developmental students tested, immediate post-test scores in the classroom-taught group ranged from 0 to 27, resulting in a mean of 17.3, and a standard deviation of 6.737. On the delayed post-test, classroom-taught developmental students scored from 4 to 30. Their mean was 17.667 and the standard deviation, 6.104.

Developmental students exposed to the alternative method of instruction, video self-instruction, scored from 4 to 32 on the immediate post-test, and 0 to 30 on the delayed. The mean of the immediate testing for this group was 19.067, and the standard deviation, 6.958. For the delayed testing, the mean was 17.1, and the standard deviation, 6.87.

Data resulting from the experiment, composed of immediate and delayed post-test scores for the 120 participating students, were analyzed by a computer program, using two way analysis of variance with

repeated measures. The repeated measures were the two times of testing.

In this chapter, each of the study's null hypotheses will be accompanied by statements reporting the relevant data. Based on the analysis of the data, each hypothesis will be accepted or rejected at the .05 level of significance.

Analysis of the Null Hypotheses

Hypothesis 1. There is no significant difference between the experimental (video self-instruction) and control (classroom instruction) groups' scores on the immediate post-test.

As indicated in the summary table of the analysis of variance on the immediate post-testing (Table 2), F was reported as .059, less than the required value for significance at the .05 level. Therefore, Hypothesis 1 was not rejected.

An examination of the mean scores by type of treatment will show why the results were not significant. Table 3 indicates that the overall mean, for immediate post-testing, for students in the video self-instructional group was 24.417. For students in the classroom-taught group, this mean was 24.150, a difference of less than .3.

Hypothesis 2. There is no significant difference between developmental and degree-program students' scores on the immediate post-test.

As indicated in the summary table of the analysis of variance on the immediate post-testing (Table 2), F was 123.754. Since the observed coefficient was greater than the table value of F at the .01 of probability, Hypothesis 2 was rejected.

Table 2

Summary Table of Analysis of Variance on
Immediate Post-Testing

Source of Variation	Sum of Squares	DF	Mean Square	F	Probability
Type of Treatment	2.133	1	2.133	0.059	p > .05
Type of Student	4465.199	1	4465.199	123.754	p < .01
Two-Way Interactions	67.500	1	67.500	1.871	p > .05
Residual	4185.426	116	36.081		

Data were obtained through use of the BMD 08V computer program.

Table 3

Mean Scores by Type of Treatment on
Immediate Post-Testing

	Mean	Standard Deviation
Video Self-Instruction	24.417	7.962
Developmental Students	19.067	6.958
Degree-Program Students	29.767	4.621
Classroom Instruction	24.150	9.185
Developmental Students	17.300	6.737
Degree-Program Students	31.000	5.401

Table 4 reports mean scores by type of student on the immediate post-testing. The mean for all developmental students participating in the experiment was 18.183, as compared to degree-program students, whose collective mean was a significantly higher 30.383.

Hypothesis 3. There is no significant interaction between treatment effects and type of student on immediate post-test scores.

As indicated in the summary table of the analysis of variance for the immediate post-testing (Table 2), the F ratio was 1.871, less than the required value for significance at the .05 level. Therefore, Hypothesis 3 was not rejected.

Comparisons of developmental and degree-program students' scores within each of the two treatment groups tend to reflect this lack of interaction. (See Table 4.) Specifically, developmental students exposed to the video self-instructional method earned a mean of 19.067, while degree-program students undergoing the same treatment earned a mean of 29.767. Within the classroom-taught group, the developmental students' mean was 17.3, as opposed to the degree-program students exposed to this method, who scored a mean of 31.

Hypothesis 4. There is no significant difference between post-test and delayed post-test scores.

As indicated in the summary table of the analysis of variance with repeated measures (Table 5), F was 2.19, less than the required value for significance at the .05 level. Therefore, Hypothesis 4 was not rejected.

Table 4
 Mean Scores by Type of Student on
 Immediate Post-Testing

	Mean	Standard Deviation
Developmental	18.183	6.848
Video Self-Instruction	19.067	6.958
Classroom Teaching	17.300	6.737
Degree-Program	30.383	5.022
Video Self-Instruction	29.767	4.621
Classroom Teaching	31.000	5.401

Table 5

Summary Table of the Analysis of Variance
With Repeated Measures

Source of Variation	Sum of Squares	DF	Mean Square	F	Probability
A Time of Testing	74.82	1	74.82	2.19	p > .05
B Time x Type Student	6.02	1	6.02	.18	p > .05
C Time x Type Treatment	20.42	1	20.42	.57	p > .05
D Time x Type Student x Type Treatment	20.41	1	20.41	.43	p > .05
Error					
A Time	1997.52	58	34.10		
B Time x Type Student	1890.59	58	32.60		
C Time x Type Treatment	2091.02	58	36.05		
D Time x Treatment x Type Student	2763.16	58	47.64		

MS = $\frac{\text{Source}}{\text{error}}$. Data were obtained through use of the BMD 08V computer program.

In Table 6, mean scores for the two times of testing are reported. (See scores for Variable C.) The overall immediate post-test mean - for all students, in both treatments - was 24.283. The delayed post-test mean, again, for all students, was 23.166, resulting in a drop in scores of 1.117 between the two tests. Hence, this drop in scores was too small to account for any significant difference.

Hypothesis 5. There is no significant interaction between the time of testing and the type of student.

As reported in the summary table of the analysis of variance with repeated measures (Table 5), F was .18, which was less than the required value for significance at the .05 level. Therefore, Hypothesis 5 was not rejected.

The illustration below indicates mean scores for each type of student as related to the time of testing.

	IMMEDIATE	DELAYED
Developmental	18.183	17.383
Degree-Program	30.383	28.950

As seen in the chart above, the relationship of the two variables - type of student, and time of testing - is approximately the same at each level. Therefore, no interaction is present.

Hypothesis 6. There is no significant interaction between the time of testing and the type of treatment.

As indicated in the summary table of the analysis of variance with repeated measures (Table 5), F was .57, less than the required

Table 6

Marginal Means for the Analysis of Variance with Repeated Measures
(average means across both times of testing)

Variable A:	Experimental (Video Self-Instructional)	Control (Classroom Instruction)
Type of Treatment	23.5667	23.8833
Variable B:	Developmental Students	Degree-Program Students
Type of Student	17.7833	29.6667
Variable C:	Immediate Testing	Delayed Testing
Time of Testing	24.2833	23.1667

value for significance at the .05 level. Therefore, Hypothesis 6 was not rejected.

The chart below reports mean scores of students exposed to each type of treatment as related to the time of testing.

	IMMEDIATE	DELAYED
Experimental (Video Self-Ins.)	24.417	22.717
Control (Classroom Teaching)	24.150	23.617

As seen in the figures above, the differences in scores are too small to account for any significant interaction. Moreover, the relationship of the two variables - type of treatment, and time of testing - is approximately the same at each level.

Hypothesis 7. There is no significant interaction among the three variables, time of testing, type of treatment, and type of student.

Based on the figures reported in the summary table of the analysis of variance with repeated measures (Table 5), F was .43. Since this was less than the required value for significance at the .05 level, Hypothesis 7 was not rejected.

Mean scores by type of student and type of treatment, for each time of testing, are recorded below.

	DEVELOPMENTAL STUDENTS	
	Immediate	Delayed
Experimental	19.067	17.100
Control	17.300	17.667

DEGREE-PROGRAM STUDENTS

	Immediate	Delayed
Experimental	29.767	28.333
Control	31.000	29.567

Again, as in the case of data reported for the previous hypotheses, the differences in scores are too small to account for any significant interaction among the three variables.

Summary

The analysis of variance of the immediate post-test scores indicated no significant difference between those taught by the classroom method, and those taught by a video self-instruction unit. Moreover, there was no significant interaction between treatment effects and the type of student. There were significant differences, however, in the scores produced by the two types of students on the immediate testing, degree-program students scoring significantly higher than those in the developmental classification.

Analysis of data from the delayed post-test produced similar results. There was no significant difference in immediate and delayed post-test scores. Moreover, there was no significant interaction between the time of testing and the type of student, between the time of testing and the type of treatment, or among the three variables, time of testing, type of treatment, and type of student.

In sum, the two way analysis of variance of the scores from the experiment demonstrated no significant interactions, and only one main effect (type of student) where significant differences were encountered.

Chapter 5

SUMMARY, DISCUSSION, AND RECOMMENDATIONS FOR FURTHER RESEARCH

One of the most difficult tasks confronting community colleges is the need to provide an effective learning experience in library instruction (Larson, 1971). Since undergraduate library-use courses have not generally been developed for this purpose, instructors and librarians have usually resorted to providing library instruction, in abbreviated fashion, through existing classes (Stoffle and Bonn, 1971). Compounding the difficulty of teaching so much material in such a short time span is the need to revise and adapt the lesson for students of diverse ability levels (Foster, 1974).

While the literature provided scant evidence as to the superiority of one method over another for teaching library skills, librarians, with increasing regularity, reported successfully using videotape at all ability levels (LeClerq, 1974; Walsh, 1974; Larson, 1971, Kiersky, 1975, Foster, 1974).

Summary

This study was an attempt to determine if library skills in a community college could be taught more effectively within the one class period time frame by a video self-instruction unit, or by classroom teaching. The study was also to consider if either of these teaching methods would be comparatively more effective when used in ability level groupings - that is, degree-program, or developmental students.

To answer these questions, permission was sought and received to conduct an experiment at a multi-campus community college. Fourteen English classes (seven developmental, and seven degree-program), producing a total of 120 participants, were used in this study. Each class was separately randomized into two groups. Students in the first group were told to report to the classroom as usual for instruction in library skills on the middle day of the designated week; students in the second were to complete a video self-instructional unit on their own sometime during the same week.

Instructors presenting library skills material to the classroom groups limited their teaching time to 40 minutes to allow time for a 16 minute, 40-item post-test. For students in the self-instructional groups, post-tests were administered individually, and timed by members of the Learning Resources Center staff.

Based on citations in the literature that the half-life of learned material was 12 days (Koppenaar, 1968; Slamecka, 1966), the researcher scheduled a delayed post-test for students in the classroom-taught group exactly 12 days after the treatment and immediate post-test. Subjects in the self-instructional group, who had viewed the videotape and taken the post-test at their convenience during the specified week, took the delayed post-test anywhere from 10 to 14 days after their immediate post-test. This was an attempt to create an average 12 day delay, the same time elapse as that encountered by subjects in the classroom-taught group. It will be noted that instructors administered the delayed test to students in both treatment groups, on the same day, in the classroom.

Data resulting from the study were analyzed by computer program, using two-way analysis of variance with repeated measures. The factorial design for the study was a 2 x 2 x 2 configuration, where the repeated measures were the two times of testing.

Independent variables in this experiment were teaching method (classroom instruction or a video self-instruction unit), student type (developmental or degree-program) and time of testing (immediate or delayed post-test). The dependent variable was achievement in library skills, as measured by subjects' scores on the Library Information Test, given as a post-test and delayed post-test.

Null hypotheses were written and tested. These were:

1. There is no significant difference between the experimental and control groups' scores on the immediate post-test.
2. There is no significant difference between developmental and degree-program students' scores on the immediate post-test.
3. There is no significant interaction between treatment effects and type of student on immediate post-test scores.
4. There is no significant difference in immediate post-test and delayed post-test scores.
5. There is no significant interaction between the time of testing and the type of student.
6. There is no significant interaction between the time of testing and the type of treatment.
7. There is no significant interaction among the three variables, time of testing, type of treatment, and type of student.

The analysis of variance of the immediate post-test scores indicated no significant difference between those taught by the classroom method, and those taught by a video self-instruction unit. Moreover, there was no significant interaction between treatment effects and the type of student. There were significant differences, however, in the scores produced by the two types of students on the immediate testing, degree-program students scoring significantly higher than those in the developmental classification.

Analysis of the data from the delayed post-test produced similar results. There was no significant difference in immediate and delayed post-test scores. Nor was there any significant interaction between the time of testing and the type of student, between the time of testing and the type of treatment, or among the three variables, time of testing, type of treatment, and type of student.

In sum, the two-way analysis of variance of the scores from the experiment demonstrated no significant interactions, and only one main effect (type of student) where significant differences were encountered.

Discussion

The study suggested, generally, that both methods of instruction were equally effective for teaching library skills. While the overall mean for students exposed to the self-instructional method was slightly higher than for those taught in the classroom in the immediate testing situation, the reverse was true in the case of the delayed post-test. That is, in the delayed testing, classroom-taught subjects scored a bit higher than self-instructional subjects. In both instances, however,

the difference was not significant, and the means for those taught by the two methods were less than one point apart for each time of testing. With differences so slight in both sets of scores, it seems that chance was the only factor responsible for the score fluctuations. Moreover, no interactive effects were evident in the analysis of the data, and neither method could be considered comparatively more effective for either type of student, or for either time of testing.

The finding in this study that was expected was the statistical difference in the test performance of the two types of students. Generally, degree-program students scored means from 10 to 14 points higher than developmental students, depending, of course, on which treatment, and which time of testing were involved. This difference in scores may indicate, first, that two types of students definitely do exist in a community college setting. Secondly, based also on the differentiation in scores, it appears that procedures for sorting students into different ability categories have been successful. Finally, a more fundamental observation is that the vast difference in scores may justify the existence of a separate instructional program for developmental students.

Extremely positive comments concerning the value of videotape in teaching not only library skills, but other disciplines as well, had appeared frequently throughout the literature (LeClerq, 1974; Walsh, 1974; Larson, 1971; Kiersky, 1975; Foster, 1974; Gordon and Falk, 1972; Kraemer, 1973; Gormley, 1974; Kaufman, 1974; Perrin, 1976; Ziggerell, 1976). These citations had led the investigator to believe that videotape instruction in library skills would be just as good as, if not better than, traditional classroom teaching. Perhaps one reason that

a video self-instruction unit did not surface as the superior method in this experiment is that students did not take advantage of self-pacing options offered by the tape. Of the 60 students using the self-instructional unit, only four reported a use-time longer than the tape's 23 minutes. Of these four, three were developmental students, and one was in the degree-program classification. The times reported by these four students, respectively, were 30, 28, 35, and 45 minutes, none of which exploited the tape's use to its fullest potential.

In failing to avail themselves of the self-pacing options, it could be that students were frozen into their home-viewing television habits, of watching programs straight through to conclusion. Despite individualized instruction in operation of the video player, students in the self-instructional group could not, or would not, bring themselves to stop the tape; perhaps they found the machinery intimidating, or the instruction in its use inadequate. As yet another explanation for the lack of self-pacing, one instructor remarked that the "slickness" of the tape lulled the students into a false sense of security about what they really understood. There is no way, of course, to verify these incidental observations.

Any evaluation of the results of this experiment should take time requirements of the two teaching methods into account. It does seem noteworthy that students who viewed the 23 minute tape - even without using the self-pacing options - performed as well in both testing situations as those who had received 40 minutes of classroom instruction. Even though there were no statistical differences in the effects of the two teaching methods, the time-saving value of the tape seem worthy of

consideration. One might speculate, for instance, about the potential value of combining the two methods, to make better use of time. It is conceivable that an instructor could play the tape for his class, monitor students' reactions, and play back certain sections at his discretion, thereby exploiting the pacing possibilities of the tape, while still retaining the question-answer and discussion elements of the classroom method.

It seems particularly notable that there was no significant difference in post-test and delayed post-test scores. This finding indicates that both types of students, regardless of instructional method, tended to retain material learned in the library skills unit. Librarians may find some solace in the fact that even though this instruction was abbreviated, it did seem to have some effect. Whether the students would have retained the material as well if there were a longer delay between tests, or even if this experiment were replicated, is for future research to decide.

Test scores for both types of students may have ranged somewhat higher in this experiment had the material not been so obviously supplemental to regular courses - that is, presented in isolation, limited to one class period, never discussed before or after. Given the lack of a formal course structure for presenting library-related material, however, authorities still seem to feel that supplemental instruction through existing classes is the best of possible ways to reach students (Millis, 1973; Beardsley, 1974; Tevis, 1974). For this reason, librarians are routinely counseled by the literature to court faculty members so they will be disposed to open their classrooms for such use (Starkey, 1974; Passarelli and Abell, 1974; Lynch, 1973).

In treating the material as supplementary, however, instructors may unwittingly pass on to their students the notion that library skills is a low-priority item in their course, and somehow, unimportant. If instructors could in some way be encouraged to elevate the importance of the library skills unit, and integrate it with other course material, it would seem logical - even using the one-time approach - that students would learn and retain more.

A final observation from the resulting data may be in order. The literature was notably silent on the matter of developmental students and the cognitive effects of the various types of media. If the difficulties encountered in running this study, particularly the attrition rate, were in any way representative of previous research efforts, one might understand why the literature has few answers where teaching strategies for developmental students are concerned. The attrition rate in the researcher's Winter 1976 pilot experiment, where developmental students were used exclusively, was a sizable 62 percent. In the later, full-scale study, involving both developmental and degree-program students, special measures were taken to prevent attrition. Nonetheless, 42 percent of the developmental students in the experimental group, and 36 percent of the developmental students in the control group, did not complete the required steps of the experiment. Particularly where small numbers of students are involved, it is difficult to make conclusive research statements when attrition is so high. Future researchers, who intend to run experimental studies involving developmental students, are counseled to use multiple sections of classes, to conduct their studies

in the fall term when enrollments are typically at their peak, and to expect attrition in spite of their precautions.

In sum, and as stated previously, video self-instruction may have emerged as the superior teaching method in this experiment, had the participating students exploited the self-pacing options of the tape. Essentially, the problem approached in this experiment was finding a way to make library instruction effective within the time allotment of one classroom period. The researcher had envisioned the videocassette's playback capabilities, plus students' willingness to spend adequate time on assignments, as a means to overcome, and possibly eliminate, the one-hour limitation. However, based on the findings of this study, it may be that a combination of the two teaching methods is needed to produce acceptable results. Future studies might possibly consider if a teacher, in a classroom setting, could act as a catalyst to enforce proper use of videocassette materials.

Recommendations for Further Research

Recommendations for further research, based on the data analysis, were implied in the discussion above. These include the following:

1. It may be desirable to replicate this study, using more students and more community colleges, in an effort to validate the results.

2. Studies should be conducted, comparing videotape instruction in the classroom to a video self-instruction unit and/or to traditional classroom teaching. Videotape plus classroom discussion might possibly combine the best features of the two methods used in this study.

3. Experiments should be run to determine if students using self-instructional packages can be encouraged to take advantage of self-pacing options.

4. Since there may be reason to believe that the one-hour limited method of library instruction may be no more than minimally effective, studies should be conducted to compare test scores of students who had received no instruction to those who had been exposed to one hour of teaching, in whatever form. Such studies may help librarians determine whether some instruction is better than none at all.

5. Research should be directed toward the development and evaluation of alternative techniques for teaching library skills.

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APPENDIX A
WORKING PRODUCTION SCRIPT FOR THE
LIBRARY SKILLS VIDEOCASSETTE

WORKING PRODUCTION SCRIPT FOR THE
LIBRARY SKILLS VIDEOCASSETTE

Video

Audio

Camera focuses on college logos in mezzanine; pans down to student lounge and across crowd.

Camera zooms in on bored looking student.

Close-up of student listening to narrator.

Camera follows student across lounge, through library doors, and in library. (Shots from rear angle.)

Side shot of student talking to the attendant.

Close-up of attendant pointing to reference librarian.

Deliberate fuzzy shot of librarian's name plate - focuses in.

High angle shots of reference librarian at her desk, working.

[Narrator speaks:]

Will you just look at this guy! He has an hour between classes and he's bored to tears.

Maybe we can get him to start on that term paper that was assigned this morning.

[Narrator addresses student:]

You! Robert! Want to get started on your term paper?

Well, come with us, and we'll show you how to use the library, how to explore its indexes, card catalog, and all the resources that are available for preparing a term paper.

The place to start is at the library information desk.

Tell the attendant that you are working on a term paper, but you don't have too much of a working knowledge of the library.

The attendant will direct you to someone on the staff who can give you one-to-one instruction in the use of library tools.

The resident expert on term paper preparation is generally speaking, the reference librarian.

This person will have special training in research and will be able to give you some useful pointers in getting started.

Video

Audio

Scenes of reference
librarian chatting with
student.

Lets say you are doing a paper
on American Indians and that
you hope somehow to get a feel
for what life is like on the
reservations.

The Librarian will suggest that
you begin by looking for genera-
lized information on the history
and everyday life of the tribes.

Student walks to card
catalog.

You mention a title of a book
your professor has talked about
before, DOG SOLDIERS, or some-
thing like that. Does the
library have it?

Close-up shot of title
section of card catalog.

The Librarian turns you loose
to find out for yourself.

You'll need to look in the card
catalog, and of course, the title
section, since DOG SOLDIERS is
the title.

Student flips through cards;
camera looks over his shoulder;
close-ups.

Alright, here we go.

Hmm, where is it, now?

There, let's see, development,
dictionary, dim, dissertation,
documentary, documentation.

Close-up of the card. Dissolve
shots from one part of the card
to another, superimposed arrows
to highlight key points.

Well, there it is!

The title, DOG SOLDIERS, BEAR
MEN AND BUFFALO WOMEN, appears
in two places on the card.

It says that this is a study of
the societies and cults of the
plains Indians.

If you look up on the line
between the two arrows, you will
see that Thomas Mails is the
author. There is quite a bit of
useful information on this card.

Video

Audio

Student shuts catalog drawer summarily, starts to move away.

At encouragement of narrator, he opens the drawer again.

Close-up of same title card. Arrow on "1973".

Arrow on "384".

Arrow on "illus".

Arrow on call number.

Dissolve to book spine with same call number.

Look on further down on the card and you will see that Prentice-Hall is the publisher. That's a pretty big outfit, so you know that this must be a reputable piece of literature.

Wait a minute now, slow down.

Before you close that drawer, lets look back and see if there is some more information on the card that you can use.

You will see that 1973 is the publishing date, which means that this material is fairly recent scholarship.

The book is 384 pages long, so it must give fairly detailed treatment to the subject.

The "i-l-l-u-s" beside the number 384 is an indication that the book is illustrated, that it has plenty of pictures, which should be useful if you are planning to do a class presentation and need some visuals to dress it up.

Note the number in the upper left hand corner of the card. This is referred to as a call number. You should remember that this is a part of the Library of Congress classification system, which groups books about similar subjects onto the same area of a shelf.

This same number will appear on the spine of a book on the white label in the J. Sargeant Reynolds Community College library.

Video

Audio

Shot of student's hand jotting down call number.

Side shot of student looking in catalog.

Close in on "Subjects" sign above card catalog.

Camera looks over student's shoulder in catalog drawer again.

Student's pencil pointing to top line of catalog card, indicating subject heading.

Student flips through cards with subject headings, "Indians of Central America," etc.

Student stops on last card.

Camera zooms in.

You should write the number down on a slip of paper and take it with you to the "stack area" for books that circulate.

Before we locate this book on the shelf, let's do a little more checking in the catalog.

One book is not going to help you write an entire paper, you know.

If you look in the subject section of the catalog, you can certainly add other titles to your list.

The important thing is to make sure that you're looking under the right subject heading.

You see, subject cards are exactly like title and author cards, except the subject headings appear at the very top of the card, instead of titles or authors.

Moreover, the subject headings are easily recognizable because they are typed with all capital letters.

You are not looking for a book about the Indians of Central America or the Indians of Mexico, but you would like to find something out about the Indians of North America, and this book, **THE AMERICAN INDIAN FROM COLONIAL TIMES TO THE PRESENT**, is a book about the Indians of North America. Let's take a closer look at that card.

The title of this book appears on the first line where the arrow points.

Video

Audio

Arrow on "Gibson".

Note that the author is Michael Gibson.

Dissolve to arrow on "1974," and "Putnam".

The book was published in 1974, and the publisher is G.P. Putnam.

Dissolve to arrow on call number.

As on other cards in the catalog, the call number appears in the upper left-hand corner and in this case it is E77, G45.

Student jotting down call number. Student walks into and past camera, into stacks.

Why don't you write that down and get a few more titles, then go on over to the "stacks" and pick up those books.

Camera facing upward; shots of call number guides on shelves.

Now, remember, you are going to have to match those numbers to the numbers on the book spine.

Find your general alphabetical area in the stacks first.

DU, HD, whoops; back on this shelf.

Split-screen; white spine call number opposite catalog card with same call number.

Keep in your mind what it is you are looking for, the white spine that matches the card.

Camera follows student, who walks slowly down stack aisle.

Once you locate the initial call number, you will find that many of the others that you are searching for appear on the same shelf or in areas nearby.

Close-up of student's finger running down call numbers on spines of books.

This is because the call numbers are part of the Library of Congress classification system and books about similar subjects are grouped together in sequence on the shelves.

Student pulling books from shelves.

Take your time in matching the call numbers to your books.

Maybe use jump cut here

BRIEF PAUSE

Video

Audio

Student sitting at table, glancing at newly located books.

Close-up shots of "Contents" page.

Student's finger running down page.

Jump cut - close-up of "illustrations".

Student flipping through to map lists, editor's introduction, etc. Use over the shoulder close-up shots.

Use some type transitional footage here.

Close-up of "appendix" page.

More close-ups, some dissolves.

Now that you have located your books, let's talk about ways to use them to maximum advantage.

At the beginning of a book, you will invariably find a table of contents, which divides the book into major chapters.

If there are illustrations, most of the time there is a list of them with appropriate page numbers also at the beginning of a book.

There might be a list of maps. Sometimes, there is an editor's introduction to the volume, and more likely than not, you will always find a preface, which introduces the book's author.

You may have heard of something called an appendix.

This is always at the end of a book and contains materials supplementary to the body of the work.

In this book, there are two appendices, footnotes, and notes on sources.

The first appendix contains chronological highlights of early Indian-White relations and you will find a list of different dates and activities associated with those dates in Indian history.

Other appendices might contain maps or statistics.

PAUSE

Video

More close-ups of pertinent pages; use over the shoulder shots; fuzzy in after each cut or dissolve; alternate.

Audio

If the book you have chosen has a glossary you are quite lucky.

This will save you the trouble of hopping up and looking in another dictionary.

A glossary generally comes at the end of a book and it gives definitions of specialized terms.

Specialized terms peculiar to that work.

In this particular case you can look up the meanings of words found in this book, such as "artifact," which is an object made by humans.

There are two other special features you will want to check for at the end of your book, and one of them is a bibliography. This is a list of other books you may wish to consult that are related to your subject.

The bibliography is arranged alphabetically by author and information such as the title, publisher and date will be included in each entry.

Sometimes the bibliography is annotated, which means that each entry is described or reviewed.

Unluckily, this bibliography is not.

Books of nonfiction should have an index to be more complete and helpful.

Video

Audio

Student's finger on "Blue Island" culture.

Studio shots - edit in:

Spell out "Preface" with character generator; add in "introduction," etc.

Jump cut.

Repeat same method for "appendix," etc.

Jump cut to page in book with footnote. Camera zooms down page; focuses in on arrow pointing to footnote.

Screen black except for circle around "9". Open up to entire screen.

Pointer on "ibid" and then to preceding footnote.

Close-up shot of student listening to narrator.

If for instance, you care to analyze the Blue Island culture for your project about American Indians the index in this volume will give you specific pages to consult.

We have touched briefly upon the features at the beginning of the book.

The preface, which introduces the author; the introduction; and the table of contents; and they most generally always appear in that order.

Recall that the features at the end of a book are possibly a general appendix, a glossary, a bibliography, and an index. A footnote appearing in the text, such as this number 8, means the author of your book is giving credit to the author of another book, that is Mr. Drucker, for having thought of a given idea first.

If you will look at footnote 9 please.

It simply says *ibid*. This refers you back to the immediately preceding footnote.

In both cases, the author has used Drucker as a source of authority.

Well then, let's stop thinking about how to use the books for a while now and think some more about your topic, American Indians.

Video

Side view of student pacing to and fro. Periodical racks are obvious in the background.

Reference Librarian approaches student.

Librarian shows student Reader's Guide.

Scenes of student and librarian chatting.

Close-up shot of mentioned volume.

Close-up of page in Reader's Guide. Student's finger runs down page.

Audio

What with the battle of Wounded Knee several years ago, and even the merchandising rage for Indian jewelry these days, you're right in thinking you can find lots of magazine articles. But you need to go about it in a more scientific way and your Reference Librarian can help - primarily by showing you the Reader's Guide.

The people who publish Reader's Guide go through a select list of magazines every month and they list all the articles in these magazines in a comprehensive index by author, title and subject.

Think of how much time that saves you.

The Reference Librarian will carefully explain the workings of the Reader's Guide and then let you see if you can find the information on your own. If you pull out the volume for March, 1974 through February, 1975, you are likely to find a good article on American Indians.

Let's see, you will need to locate the subject heading in Reader's Guide for American Indians.

American Indians. See Indians of North America. This is called a cross-reference. Just as you sometimes find a cross-reference entry in the card catalog, you will find a cross-reference entry in the Reader's Guide.

A cross-reference simply lists related topics for you to check in doing your research.

Video

Audio

More close-ups.

Special effects: underlining of "American Indians Symposium," etc.

Camera blocks out everything but this entry.

"Michener" - underlined.

"Reader's Digest" - underlined.

Arrow on "104".

Arrow on "206 through 7".

Arrows on date and "il".

Pan indexes on table.
Close-up of Ed. Index.

Or as in this case it might tell you somewhere else to look to find the needed information.

Alright, so let's look under Indians of North America.

Under Indians of North America, you will find one article entitled "American Indians Symposium" and another article entitled "American Names".

That doesn't seem exactly what you want.

Here is one that does: "Lame Beaver - the Life of a Plains Indian".

The author of this article is J. A. Michener.

This article can be found in the Reader's Digest; abbreviated on the screen as READ DIGEST.

Now, 104 refers to the volume number of Reader's Digest you will be looking for.

207 through 7 with the plus sign means that the article starts on page 206 and the plus sign means that it is continued somewhere else in the publication.

April, 1974 is the date of the Reader's Digest, and the il. notation as on a catalog card, means that the article is illustrated.

Now, while you are here at the periodical table, let's talk a second about Education Index, which gives you more access to specialized articles.

Video

Audio

Shots of student sitting at index table.

Use character generator for "Poole's Index".

Student gives information to attendant.

Attendant speaking to student.

Jump cut.

Shot of "Reference" sign.

Reference Librarian chatting with student - reference shelves behind them.

Use character generator for spelling these out; fade into a pan of reference shelves.

If you were interested, let's say, in an article on teaching techniques used on the reservations, you would look in Education Index.

Poole's Index is the forerunner to Reader's Guide. If, for example, you were interested in determining the sentiment of New Yorkers to the Indian population in 1880, you should check Poole's Index.

It covers articles published in magazines from 1800 to 1890.

So give the information you have written down about the article you want from the Reader's Digest, the article entitled "Lame Beaver," to the attendant.

She will either find it for you or tell you where you can locate it on the shelves; and there, wasn't that easy?

PAUSE

Some books are used so frequently that the library has set them aside from all others in a section called Reference.

Before you leave, why don't you let the Reference Librarian give you a few extra pointers.

There are all types of reference books, and the foremost among them are encyclopedias; gazeteers, which are geographical; abstracts, almanacs, and indexes.

Some of these works are hot-off-the-press and you might not always be familiar with how to use them.

Video

Audio

Shot of introductory page in a reference book.

The way to solve this is to examine the introduction to the reference book.

Continued shot of introductory page.

In most cases this section will give you detailed instructions on how to use the book to maximum advantage.

Shot of student's hand pulling out a dictionary of philosophy.

We all know what a dictionary is, but did you know that there are specialized dictionaries? Such as this Dictionary of Philosophy. Then too, another popular and very useful type of dictionary is a biographical dictionary, such as the Dictionary of American Biography. Here you can find the main facts of an individual's life, when he was born, when he died, and a description of his major accomplishments.

Pan to DAB on shelves.

You should know, too, about the world famous Oxford English Dictionary.

Pan OED.

This is a multi-volume set, which explains historical origins of words; what words have meant at different periods in time. The Oxford English Dictionary.

Close-up shot of CBI.

Still another major reference tool is the Cumulative Book Index.

"Cumulative" on screen (blocked in by special effects).

Cumulative, think about that word.

Pan title CBI back out.

Webster defines Cumulative as, increasing by successive additions.

Split screen of CBI on its side, and page within CBI.

The Cumulative Book Index is an index to all books published in the English language since 1928.

Video

Audio

Pan a page slowly in CBI.

Titles of books published each year are added to this enormous work.

Student pulls out almanac.

If someone asks you to find a list of all books published since, say, 1945, on the subject of the American Indians, you would find it in the Cumulative Book Index.

Student flips through almanac, opens to a specific page; camera looks over his shoulder.

Before we leave the reference section of the Library, you should know about one of the most useful of all reference tools, the Almanac.

Student starts to gather his materials and leave the Library.

There you will find recent statistics, for instance, concerning how many homeruns were hit by your favorite baseball player, or the number of cars registered in the various states, or whatever.

So there you have it, how to use the Library in a nutshell.

Jump cut back to brief shots of

- 1) Reference Librarian
- 2) the periodical indexes and
- 3) the card catalog.

Let's recap for just a second.

Remember that there are three main sources in locating information in this or any library.

Your first and primary source, of course, is your college Reference Librarian. Periodical indexes should be your second source, as they give you access to articles in all types of magazines. Finally, you should recall that you will need to look through the card catalog, thoroughly checking under all possible subject headings.

Video

Continued shots of student passing by camera and walking out of view. Student throws his hand up in gesture of relief.

Audio

So, with your new knowledge of these library tools and methods, you should be well on your way to producing one heck of a fine paper.

APPENDIX B
INSTRUCTIONS GIVEN TO STUDENTS IN
THE CLASSROOM PRIOR TO THE EXPERIMENT

INSTRUCTIONS GIVEN TO STUDENTS IN
THE CLASSROOM PRIOR TO THE EXPERIMENT

On the Monday of the week of the experiment, each instructor made comments to his class approximating the following:

"This week we are going to try something new. We are going to study library skills, and the class will be broken up into two groups. Half of the class - your names are on the board - will not come to class this Wednesday. Instead, you people must complete, on your own, a videocassette library skills unit in the LRC sometime prior to Friday; use the Wednesday class period for this purpose, if you wish, or do it at your convenience any other time during the week."

"The rest of you will report to the classroom, as usual, on Wednesday. This group will go over the same library skills material as those who must visit the LRC.

"Everybody will take a brief 16-minute test on this material. For the people who come to class Wednesday, I will administer the test. People viewing the videocassette in the LRC will be responsible for getting someone on the LRC staff to give you the test. They have your names and the test forms, and they will give me your test when you're through."

Only those students whose names were sent to the LRC were permitted to view the library skills videotape.

Finally, instructors did not tell their classes that a delayed post-test would be given on the same material.

APPENDIX C

LIBRARY INFORMATION TEST

STAFF USE ONLY

TIME SPENT VIEWING UNIT: _____

SCORE: _____

LIBRARY SKILLS TEST

You have sixteen minutes to complete this test. Do not begin until your instructor so indicates

YOUR NAME: _____

YOUR INSTRUCTOR'S NAME: _____

COURSE & NO.: _____

UNDERLINE THE CORRECT ANSWER

Use the following excerpt from a library catalog card to answer Items 1-4.

BYRD, RICHARD E.
 920 Kendall, Walter F., 1930
 B Discovery, N.Y., McGraw,
 c 1959

1. Walter F. Kendall is the book's
 - F author
 - G editor
 - H publisher
 - J subject
2. Richard E. Byrd is the book's
 - A author
 - B co-author
 - C subject
 - D title
3. The publisher of the book is
 - F McGraw-Hill
 - G N.Y. Discovery
 - H Richard E. Byrd
 - J Walter F. Kendall
4. What type of catalog card is this?
 - A author card
 - B subject card
 - C title card
 - D none of these
5. The glossary of a book is a
 - F dictionary specific to the book
 - G list of other sources of information on the subject
 - H section of specific topics in the book
 - J special kind of plastic coating for cover
6. If one has trouble finding information for a research paper, which one of the following would be the best to consult?
 - A the card catalog
 - B the encyclopedia index
 - C the pamphlet catalog
 - D the reference librarian
7. In a footnote, what term means to refer to the immediately preceding information?
 - F et al.
 - G ibid.
 - H op.cit.
 - J viz.
8. Which one of these references would contain the main facts about Shakespeare's life?
 - A a biographical dictionary
 - B a critical abstract
 - C a literature handbook
 - D a Shakespeare lexicon

UNDERLINE THE CORRECT ANSWER

9. Which one of the following reference books would give the budget of the U.S. in 1962?
- F a gazetteer
 G a statistical abstract
 H an astronomical handbook
 J an encyclopedia
10. What information is found in the appendix of a book?
- A biographical material about the author
 B definitions of words in the text
 C Material supplementary to the body of the work
 D pronunciation of words used in the book
11. What information is given on a cross reference card in a card catalog?
- F a list of related topics
 G the location of articles on the subject
 H the names of authorities on the subject
 J reference to reviews by critics
12. Which one of the following sources would aid in locating an article on teaching deductive reasoning?
- A Cumulative Book Index
 B Education Index
 C the audio-visual aid catalog
 D the card catalog
13. Which one of these references would include recent baseball statistics?
- F a bibliography
 G a gazetteer
 H an almanac
 J an encyclopedia
14. Which of these library catalog drawers contains the card for the book A Short Review of Russia?
- A As-Asi
 B Rab-Riz
 C Shk-Shoo
 D Shop-Short Stories
15. Which one of the following references would not give you information about a topic but would indicate another source that contains the needed information?
- F a bibliography
 G a gazetteer
 H a handbook
 J a yearbook
16. Which publication below would provide the titles of books published since 1945 on reading comprehension?
- A Books in Print
 B Cumulative Book Index
 C New York Times Index
 D U.S. Catalog

UNDERLINE THE CORRECT ANSWER

17. The introduction to a reference book tells
- F how to use the book
 - G something about the author
 - H the page number at the beginning of each chapter
 - J what reference materials the author consulted
18. Which of the following is the usual order of material placed at the beginning of a book?
- A fly leaf, table of contents, title page
 - B preface, introduction, table of contents
 - C table of contents, bibliography, introduction
 - D title page, index, table of contents
19. What section of a book cites the authority for statements in the text?
- F the appendix
 - G the footnotes
 - H the index
 - J the table of contents
20. Which one of these books would help locate a poem that was published in a magazine in 1883?
- A International Index
 - B Poole's Index to Periodical Literature
 - C Reader's Guide to Periodic Literature
 - D Subscription Books Bulletin

UNDERLINE THE CORRECT ANSWER

Use the following excerpt from a page in Reader's Guide to Periodic Literature to answer Items 21-24.

HEART

Surgery

New instruments for open heart surgery. S.L. Palmer in *Bsns W* 89:100-2 + Je 21'69

21. S. L. Palmer is the article's
- F author
 - G editor
 - H illustrator
 - J subject
22. This reference is classified by
- A author
 - B illustrator
 - C subject
 - D title
23. What does "89" signify?
- F August 9
 - G the chapter number
 - H the number of pages
 - J the volume
24. What does "+" signify?
- A additional sources
 - B continued elsewhere in the publication
 - C pp. 100-2 plus pictures
 - D that the article ends on p. 103
25. Besides Dewey Decimal, what is the other major library classification system?
- F American Library System
 - G Carnegie System
 - H Columbia Classification
 - J Library of Congress
26. Which one of these reference books would contain the main facts about John Milton's life?
- A a biographical dictionary
 - B a critical abstract
 - C a literature handbook
 - D A Miltonian lexicon
27. Which one of the following helps in locating a specific book in the library?
- F the call number
 - G the cross-reference catalog card
 - H the document file
 - J the reference room layout
28. Which of the following indicates the correct order of material placed after the body of the text in a book?
- A appendix, glossary, index
 - B bibliography, table of contents, footnotes
 - C footnotes, index, dedication
 - D index, glossary, table of contents

UNDERLINE THE CORRECT ANSWER

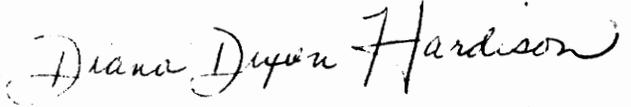
29. Which part of a book indicates pages that contain information about a specific topic?
- F the appendix
 - G the glossary
 - H the index
 - J the preface
30. Which one of the following sources would aid in locating an article on teaching poetry writing?
- A Books in Print
 - B Book Review Digest
 - C Education Index
 - D The Urban Review
31. Which one of these reference books would list all the winners of recent motion picture Academy Awards?
- F A biographical dictionary
 - G a book review digest
 - H a periodical index
 - J an almanac
32. Which section of a book gives definitions of specialized words used in a book?
- A the appendix
 - B the foreword
 - C the glossary
 - D the index
33. Which one of these publications would provide the titles of books published since 1945 on speed reading?
- F Books in Print
 - G Cumulative Book Index
 - H New York Times Index
 - J U.S. Catalog
34. Which one of these publications would aid in locating opinions on popular biography?
- A Book Review Digest
 - B Cumulative Book Index
 - C Twentieth Century Authors
 - D Webster's Geographic Dictionary
35. Which important feature distinguishes the Oxford English Dictionary from other dictionaries?
- F its complete index
 - G its inclusion of foreign words and phrases
 - H its treatment of the historical origins of words
 - J its unique diacritical marking system
36. Which of the following contains information on those books, besides Little Women, authored by Louisa Mae Alcott?
- A a bibliography
 - B a dictionary
 - C a yearbook
 - D an abstract

UNDERLINE THE CORRECT ANSWER

37. Which one of these reference books would give the birth-place of a popular contemporary author?
- F a bibliography
 - G a biographical dictionary
 - H an atlas
 - J an encyclopedia
38. Which part of a book contains material that is supplementary to the body of the text?
- A graphs, charts, and illustrations
 - B the appendix
 - C the glossary
 - D the index
39. Which term below names the type of bibliography in which the entries are described or reviewed?
- F annotated
 - G anomalous
 - H chronological
 - J selective
40. Which part of a book introduces the author?
- A the bibliography
 - B the cover
 - C the frontispiece
 - D the preface

VITA

Name: Diana Dixon Hardison



Born: June 17, 1948

Married: Edwin Thomas Hardison

Education:

1962-1966 Elizabeth City, N.C., High School
1966-1968 Greensboro College, Greensboro, N.C.
1968-1970 University of North Carolina at Chapel Hill
Degree: Bachelor of Arts
1970-1971 University of North Carolina at Chapel Hill
Degree: Master of Science in Library Science
1973 University of Texas at Austin
Certificate, Institute for Library Learning
Resources Centers
1972-1977 Virginia Polytechnic Institute and State
University, Blacksburg, Va.
Degree: Doctor of Education in Community
College Education

Honors: Valedictorian, Elizabeth City, N.C., High School 1966
Jefferson Standard Scholar, Greensboro College 1966-1968
North Carolina State Library Fellowship for Graduate
Study, 1971

Employment

History:

Administrative Experience. 1971-1973 Coordinator of
Library Services, Paul D. Camp Community College,
Franklin, Va.

1973-1976 Director of Learning Resources, Parham Road
Campus, J. Sargeant Reynolds Community College, Richmond,
Va.

Teaching Experience. 1972-1973 Adjunct Instructor,
Old Dominion University, Norfolk, Va.

1974-1975 Adjunct Instructor, University of Richmond,
Richmond, Va.

Professional

Activities:

Memberships: Virginia Library Association; Virginia
Educational Media Association; Virginia Television
Representatives; American Association for Community and
Junior Colleges
Reviewer of books for Library Journal
Smithsonian Associate

LIBRARY INSTRUCTION IN A COMMUNITY COLLEGE: A STUDY TO
DETERMINE THE COMPARATIVE EFFECTIVENESS OF CLASSROOM
TEACHING AND A VIDEO SELF-INSTRUCTION UNIT FOR
DEVELOPMENTAL AND DEGREE-PROGRAM STUDENTS

by

Diana Dixon Hardison

(ABSTRACT)

The study attempted to determine if library skills in a community college could be taught more effectively within a one-class-period time frame by a video self-instruction unit or by classroom teaching. The experiment also considered the comparative effectiveness of both modes of instruction when used in groups of developmental and degree-program students. The study was conducted at a multi-campus community college in the fall of 1976. Fourteen English classes (seven developmental, and seven degree-program) participated, yielding 120 subjects after attrition. Each class was separately randomized into two groups. The first group reported to the classroom as usual for instruction in library skills; the second group completed a video self-instructional unit on their own during a designated time period. Instructors of the classroom groups administered post-tests to their students immediately after the lesson. For students in the video self-instructional groups, members of the Learning Resources Center staff administered the post-tests individually. Delayed post-tests were administered to students in both types of groups, by the instructor, 12 days after the "classroom teaching" session. The analysis of variance with repeated measures revealed no significant differences between those taught by the classroom method, and those taught by a video self-instruction unit, for both times of testing.