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## Programed Instruction and the Card Catalog

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## Programed Instruction and the Card Catalog

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### Abstract

An extensive amount of research has been done regarding programed instruction and also regarding programed instruction versus traditional teaching. However, very little research has been done in the area of programed instruction as a method of teaching the use of the card catalog. 17 rom studies that have been conducted; however, conclusions and assumptions can be made as to the feasibility of teaching the card catalog using programed instruction.

PROGRAMED INSTRUCTION AND THE CARD CATALOG

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Faculty of the Library Science Department

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In Partial Fulfillment  
of the Requirements for the Degree  
Master of Arts

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Colette Tobin

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## PROGRAMED INSTRUCTION AND THE CARD CATALOG

Today much emphasis is being put on the library as an extension of the classroom. This emphasis comes from the new teaching methods that have been implemented in schools, such as individualized instruction, large group instruction, team teaching, small group instruction, and other similar methods. The library serves as an extension of the classroom in that students use library resources in the library and learning activities are designed around these resources. Because of these methods of teaching currently being used, students are no longer limited to just resources in the classroom but have the mobility which allows them to use other resources in the school, such as the print and non-print resources in the library.

The accessibility of these resources to the students is very important. The student must know what resources are available and how to retrieve them. The librarian plays an important role in helping the student know what is available and how to retrieve it. The librarian's role can be that of telling the student what is available and then getting the material for him, or the librarian's role can be that of instructing the student in how to ascertain what material is available and how to locate it. Surely, the latter role would be more beneficial to the student and would be the role most librarians would choose to perform.

If the librarian is going to instruct students how to determine what material is available and how to retrieve it, the card catalog could be the logical basis for this instruction since it is an alphabetical index to all the resources in the library. The librarian must choose an effective means or method for teaching the students how to use the card catalog.

The librarian can choose the traditional method of instruction, that being the teacher-lecture, discussion method, or the librarian can choose a new method of instruction, such as programmed instruction.

This paper will consider programmed instruction as a method of teaching and also the feasibility of programmed instruction as a means or method of teaching the card catalog. Programmed instruction, as referred to in this paper, is a specifically defined method of teaching that presents material in small sequential steps or frames; requires a response from the student after each frame and provides an answer or feedback to the student's response after each frame.<sup>1</sup>

An extensive amount of research has been done regarding programmed instruction and also regarding programmed instruction versus traditional teaching. However, very little research has been done in the area of programmed instruction as a method of teaching the use of the card catalog. From studies that have been conducted, however, conclusions and assumptions can be made as to the feasibility of teaching the card catalog using programmed instruction.

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<sup>1</sup>K. C. Cole, "Fill In the Bl\_ nk," Saturday Review, I (May, 1973), p. 55.

EXAMPLE OF PROGRAMED INSTRUCTION<sup>2</sup>

15. To speak of one variable being a consequence of another variable is to stipulate that the former is \_\_\_\_\_ (dependent upon/independent of) the latter.

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dependent upon

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16. In part, reading is a \_\_\_\_\_ of the variable intelligence.

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consequence

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17. Reading ability is \_\_\_\_\_ upon the individual's intelligence level.

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dependent

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18. An individual's age \_\_\_\_\_ (is/is not) dependent upon an individual's height.

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is not

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19. Height, in addition to being dependent upon age, is also \_\_\_\_\_ upon the individual's sex.

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dependent

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<sup>2</sup>Samuel Levine and Freeman F. Elzey, A Programed Introduction to Research (California: wadsworth Publishing Company, 1968), pp. 46-47.

Although Wilbur Schramm, author of Programed Instruction Today and Tomorrow, maintains that the theory of education and the theory of psychological learning for programed learning existed five hundred years ago, it was not until 1954 when Professor B. F. Skinner read a short paper to a conference of psychologists and the paper was reprinted several times that large numbers in the educational world turned their attention to the possibilities offered by programed instruction.

The emphasis on programed instruction seemed to be prevalent during the 1960's, and much research was conducted during this decade concerning programed instruction versus traditional teaching.

Research has found, according to Schramm, that programed instruction has been used successfully to teach a great variety of subject matter--mathematics and statistics, foreign language, English language correctness, spelling, natural science, psychology, library use, and a number of industrial, business, and military skills.<sup>3</sup>

Although some feel that there is no comparison level for programed instruction and traditional teaching, Robert Morgan, in his research comparing the two methods, found that generally groups learning from well-constructed programed instructional materials were at least as good as teacher-taught groups and often had higher average final test scores, a lower variability

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<sup>3</sup>Wilbur L. Schramm, Programed Instruction Today and Tomorrow (New York: Fund for the Advancement of Education, 1962), p. 46.

of student performance and took less time for completion.<sup>4</sup>

Isolated classes, according to Robert Branson, tried programed texts in specific course content areas with generally favorable results. Rarely did the program do worse than the traditional methods when the same criterion test was used.<sup>5</sup>

In a study conducted in 1970 by Brigham Young University's library, the library launched a new program in an attempt to solve the problem of teaching its entire student body basic library skills. The present method of instruction, basically the traditional method, was not satisfactory because of time, the size of the student body, scoring and testing.

The library with the help of other departments devised programed learning materials for teaching the use of the card catalog. It was decided to use 161 sophomore English students for the experiment, because they were easily available. The sophomore English students were assigned to three groups: Group I received the taped programed instruction; Group II received the non-programed summation of rules; and Group III served as a control group and received no instruction.<sup>6</sup> All groups received the same pretest and post-test.

The study found that an analysis of covariance using the pretest scores before instruction and the Scheffe and Least Significance Difference Test showed significant difference

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<sup>4</sup>Robert Morgan, "A Decade of Programed Instruction," Educational Technology, X (July, 1970), p. 30.

<sup>5</sup>Robert K. Branson, "The Criterion Problem In Programed Instruction," Educational Technology, XXXIII (July, 1970), p. 36.

<sup>6</sup>Marvin E. Wiggins, "The Development of Library Use Instructional Programs," College and Research Libraries, XXXIII (November, 1972), p. 476.



methods almost entirely? The problem arises in the part of statement concerning "the material presented." Dr. Elwood E. Miller has stated that the most practical use of programmed instruction is at the level of basic mastery of fundamentals.<sup>10</sup> Not all learning acquired is at this level but transcends this level to include concepts in the affective domain. Likewise, it is stated that a program must be accompanied by a test which will indicate successful mastery of the subject matter.<sup>11</sup> Not all learning acquired must be or can be tested to indicate successful mastery, because the level of learning may not be conducive to testing.

Learning that meets the criteria for programmed instruction is learning for which a test can be designed to measure mastery and for which a basic mastery of fundamentals to be studied exists. Consequently, the need for the teacher and the traditional method is not eliminated, because all learning does not meet these criteria.

An advantage of programmed instruction is that it is a means of individualizing instruction. K. C. Cole states that when used correctly, programmed instruction can provide for highly individualized and controlled learning.<sup>12</sup> William Deterline also supports this fact in his statement that well constructed programmed texts can effectively handle a fair range of

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<sup>10</sup>Elwood E. Miller, "Don't Be Afraid of Programed Learning," Grade Teacher, LXXXIII (May, 1966), p. 180.

<sup>11</sup>"Programed Instruction," Instructor LXXIII (June, 1964), p. 51.

<sup>12</sup>Cole, loc. cit.

individual differences and provide time for the teacher to work individually with those students that the program misses.<sup>13</sup>

Richard Walker also concludes that one of the major gains in the utilization of independent study materials, such as programed instruction, has been the freeing of teachers for more academic presentation of materials while the student prepares himself to deal with basic concepts at his own pace.<sup>14</sup>

Research designing programed instructional materials has resulted in some important and basic conclusions for education. One author stated the following: While learning how to develop and use programed materials of many kinds, we learned to solve some of the problems of individualizing instruction. And we developed some skills that are useful in attacking many kinds of instructional problems. We learned how to identify, develop and analyze objectives. We discovered that a criterion test is one of the most powerful design instruments we can devise. We have learned how to design interactive instruction for both individual and group settings. And of course we had to learn how to make programs work, testing and revising until detailed objective are reliably achieved. In short, we learned to define our goals operationally and achieve them empirically.<sup>15</sup>

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<sup>13</sup>William A. Deterline, "Programed Instruction Today," Educational Technology, X (July, 1970), p. 29.

<sup>14</sup>Walker, op. cit., p. 50.

<sup>15</sup>Deterline, loc. cit.

Robert Morgan determined the most important contribution of programmed instruction, however, is the concept that instruction should be designed and presented in order to lead to intended outcomes; that if these outcomes are not attained the instruction, not the learner, is deficient; and that the instruction will be revised on the basis of the learner feedback until it does yield predictable student learning.<sup>16</sup>

The card catalog and programmed instruction are compatible as indicated by the literature and the material presented in this paper. The <sup>use of</sup> card catalog is a basic mastery of fundamentals, and the mastery of these fundamentals can be tested. Thus, the card catalog meets the criteria for programmed instruction and the learning associated with it. The fact that programmed instruction could aid in helping to individualize a library program and also aid in developing a meaningful teaching and learning method can not be overlooked as a contribution to a library program.

A student must be a relatively independent user of library resources by means of the card catalog in order to complete learning activities in the library successfully. The ease and familiarity with which the student is able to use the card catalog not only facilitates his learning during his elementary and secondary schooling but also during any higher educational learning experience and as an adult user of libraries.

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<sup>16</sup>Morgan, loc. cit.

Consequently, the librarian must use an effective means of instructing the student in the use of the card catalog. This means can be a programed instruction designed to teach the use of the card catalog.

The programed instruction booklet that accompanies this paper has been designed to be used as a review of the card catalog for fifth and sixth graders. The literature indicates that it is feasible to use programed instruction as a means of teaching the card catalog. Likewise, a review of the card catalog, which can reteach, can be designed in a programed instruction format.

The students, for whom the programed booklet has been designed, have had extensive instruction in the use of the card catalog starting in the second grade with the alphabetical arrangement of the card catalog; determining the basic information needed to find a fiction book; and actually finding a fiction book of the shelf. All of these activities have been designed and conducted to eliminate frustrating attempts to complete them.

The instruction progresses through the third and fourth grades where the major emphasis of instruction is put on the card catalog. The students expand their use of the card catalog to find fiction, non-fiction and biography books. The students also are taught how to determine the kind of cards found in the card catalog. This enables them to determine the information they need to have to find a book and also makes

them aware of the fact that there are three ways a book can be found in the card catalog. Students at this grade level demonstrate actual use of the card catalog by finding the three types of books in the library during the instruction period.

Thus, the student, when he enters fifth and sixth grade, has had definite experience using the card catalog, is familiar with the terminology associated with the card catalog, and is well acquainted with the arrangement of the card catalog and format of the three types of cards in the card catalog. Consequently, only a review of the card catalog, early in the school year for fifth and sixth graders, is necessary.

The objectives of the review programed booklet for the library program can be stated in terms of behavioral objectives for the librarian. By implementing the programed instruction booklet, the librarian will be able to give a thorough review of the card catalog that can be completed in a forty-five minute period. The librarian will be able to identify individual weaknesses of students in their understanding and use of the card catalog after a three month time period. The librarian will be able to determine remediation groups and areas of remediation for these groups or individual students. The librarian will be able to reacquaint students, early in the school year, with the terminology and procedure as related to the card catalog. The librarian will be able to individualize the library skill program more adequately.

The objectives of the programmed instruction booklet for the students can also be stated in terms of behavioral objectives. After completing the programmed review of the card catalog, the student will be able to identify the three types of cards found in the card catalog; identify the basic information about a book found on a card in the card catalog; use the card catalog to get the necessary information needed to find a book on the shelf; use the card catalog and locate a book on the shelf; and complete satisfactorily a post-test, either written or oral, covering the material in the programmed review.

In accomplishing the above objectives; the goals of the library program, in which the programmed instruction review will be implemented, can be met. One of the goals of this library program is to individualize library instruction whenever possible. The library program also strives to use the most effective means of teaching the use of the library. Another goal of the library program is to provide a basic understanding of the card catalog to each student who is capable of attaining this understanding. Helping students become independent users of the library is also a goal, since many more learning activities are being designed using library resources.

The library program also strives to constantly update the program and try innovative plans that will be beneficial to the students, the library program, and the entire school.

The use of the programmed review will enable the library program to achieve this goal.

The innovative plan currently being developed would involve students, the library program and the entire school. After students have completed the review and any remediation, if necessary, has been finished, the students will be able to sign up for activities that would be completed during the library skill period scheduled each week. These activities include planning book talk presentations; planning and rehearsing a favorite story to be presented to younger students or peers in the school; recording a story or favorite chapter of a book to be listened to by another student or group of students; doing reference work; reading to a small group of younger students; listening to younger students read; acting as a library helper to the librarian; working in a subject area gathering materials for units of study in the classroom; or producing a slide-tape presentation.

From the list of activities the students have to choose, it is obvious the total school would become involved in the library program, and this involvement would be beneficial to both students and the library program. The innovative plan would help the library accomplish the goals of encouraging student creativity and of fostering a cooperative spirit on all levels in the school.

The programmed instruction booklet will be used for the first time during the first nine weeks of the coming school year.

This will enable the students to start participating in the new innovative plan almost at the beginning of the school year. Thus, the student will have a greater chance to explore as many of the activities as possible.

From its actual use, this programed booklet will be used to meet the objectives and goals stated in this paper. Also after the programed booklet has been used, the frames that need to be revised will be evident as determined by the students' performance. Adhering to Morgan's belief that deficient learning is attributed to deficient instruction, the programed booklet will be a more worthwhile teaching instrument after it is revised.

Programed instruction offered a challenge to those who first experimented with it and did research in designing programed instruction instruments. The challenge still exists for anyone who wishes to design an effective teaching instrument, to individualize learning, and to improve the teaching instrument through evaluation and revision.

An explanation may be needed in regard to Frame 38 of the programed booklet. The frame instructs the student to use the card catalog and look up the two books listed below. Since this programed booklet will be used in more than one school, the two books will be written on a piece of paper and clipped to this frame. Thus, the individual library collections will be the source for these books. Every five programed



instruction booklets will have a different list of books to be found by the students. If this proves unsatisfactory, it is possible that each booklet will have a different list of books.

## BIBLIOGRAPHY

- Branson, Robert K. "The Criterion Problem In Programed Instruction," Educational Technology, XXXIII (July, 1970), 36.
- Cole, K. C. "Fill In the Bl\_ nk," Saturday Review, I (May, 1973), 55.
- Deterline, William A. "Program Instruction Today," Educational Technology, X (July, 1970), 29-47.
- Levine, Samuel and Freeman F. Elzey. A Programed Introduction to Research. California: Wadsworth Publishing Company, 1968.
- Lewis, Philip. "Programed Learning '64," Illinois Libraries, XLVI (February, 1964), 109-15.
- Miller, Elwood E. "Don't Be Afraid of Programed Learning," Grade Teacher, LXXXIII (May, 1966), 180-82.
- Morgan, Robert. "A Decade of Programed Instruction," Educational Technology, X (July, 1970), 29-32.
- "Programed Instruction," Instruction, LXXIII (June, 1964), 51-3.
- Schramm, Wilbur L. Programed Instruction Today and Tomorrow. New York: Fund for the Advancement of Education, 1962.
- Walker, Richard K. "Independent Study Materials in Library Science," Journal of Education for Librarianship, X (Summer, 1969), 44-52.
- Wiggins, Marvin E. "The Development of Library Use Instructional Programs," College and Research Libraries, XXXIII (November, 1972), 473-9