

Teaching A Unit On The Use of Selection Sources: A Comparison of Two Media Formats

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Introduction

Students in a traditional reference course are required to look at many specific titles. Consequently, a large amount of time is required for the students to look at the reference sources individually. Part of this time is used in locating the materials on the shelves, and in identifying the important aspects of the source itself. Neither experience contributes to the student's knowledge of the sources.

The logical assumption has been that actually handling the sources would be advantageous. This study sought to see if the use of slides in previewing the reference sources could save time while maintaining both equal achievement and attitude to hands-on experiences.

Objectives of the Study

The study used the two formats and compared them in three areas: achievement, time, and attitude. Was there a significant difference in student achievement as reflected by gain score?¹ Was there a significant difference in the amount of time required

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to complete the exercise manuals? Finally, was there a significant difference in the attitude toward the instructional materials. Attitude toward the instructional materials considered objectives, learning activities, instructions, difficulty of the unit, and an overall rating of the instructional materials.

Content

The content for the study was selection sources used in choosing materials for students in the public schools. Numerous factors were considered in deciding which sources to include. A major consideration was to include sources which would be of most value to prospective media specialists and which would most likely be available in the public schools. Finally, the study included each of the major types of selection sources, including listings, standard collections, indexes to reviews, and periodicals. After consultation with subject matter specialists in Library Media and Instructional Development at Purdue University, the following sources were selected: *Books in Print*, *NICEM Indexes*, *Book Review Digest*, *Media Review Digest*, *H.W. Wilson Catalogs*, and *Elementary School Library Collection*. In addition, the following periodicals were selected: *Appraisal*, *Booklist*, *Bulletin of the Center for Children's Books*, *Hornbook*, *Previews*, *School Library Journal*, *Wilson Library Bulletin*, and *World of Children's Books*.

Students were expected to know titles of these and to determine the strengths and weakness of the different types of selection sources, to contrast and compare the selection tools and their special characteristics. In addition, they were required to choose selection sources they would want represented in their school, and to defend their choices.

Once the content was determined, objectives were written. The format for the objectives included audience, behavior, and condition.² The objectives of the instructional unit involved different cognitive levels.³ An effort was made to avoid having only objectives which required factual recall. Consequently, some of the higher cognitive levels, such as analysis and evaluation, were included. In parentheses after each objective is its assigned cognitive level according to Bloom.

1. Given hypothetical situations, the learner will name the appropriate selection source for the given situation. (Knowledge)
2. Given the four major types of selection sources, the student will briefly describe them and state a strength and weakness of each type of source. (Comprehension)
3. Given two selection sources, the student will contrast and compare them in a brief written summary. (Analysis)
4. Given a list of periodical selection sources, the student will classify them according to whether or not they list only recommended sources. (Comprehension)

5. Given a list of periodical selection sources, the student will classify them according to whether or not they review audio visual materials as a regular feature. (Comprehension)
6. Given a list of periodicals reviewing children's materials, the student will choose two periodicals that should be available in a school media center, and defend their choices in a brief written summary. (Evaluation)
7. Given special characteristics, the learner will name the appropriate selection source which has that characteristic. (Knowledge)
8. Given a subject, the student will formulate a procedure for selecting materials about that subject, by listing in order the sources, they would use, including how they would use them. (Synthesis)

Once the subject content was determined, the two units of instructional materials were then developed using the model proposed by Russell and Johanningsmeier. Their model includes the following six steps: 1. exact specification of objectives, 2. construction of criterion items, 3. analysis of learner characteristics/specification of entry behavior, 4. sequencing of instruction/selection of media, 5. student tryout, and 6. evaluation.⁴

Subjects

The study used the 106 students who were enrolled in Purdue's introductory children's literature course during the Spring Semester 1981. The following statistics reflect the composition of the class: 90% were in the 18 to 24 age category; 94% were female, 94% were either elementary education or media science majors; 97% had a grade point average of at least 4.0 on a 6.0 scale; 95% were Caucasian, and 89% were from the state of Indiana. Thus, the subjects were fairly homogeneous.

Treatment

A control group and an experimental group were randomly selected. The control group received instruction through the use of an audio tape, exercise manual, and the actual selection sources. In contrast, the experimental group used an audio tape, exercise manual, and slides. An attempt was made to control the other factors involved, so that the groups would be equivalent. For example, in both groups the students worked individually with identical exercise manuals. Furthermore, the information given on the audio tape was the same for both formats.

Experimental Design

"Campbell and Stanley Design Number Four"⁵ was used to determine if a significant difference in student achievement was reflected by the gain scores. Students first took a pretest in their

class. They were then assigned locations where they individually completed the exercise manual. After a sufficient time lapsed students took the post test in class. Although the pretest and post test were not identical, they were parallel with each other in regard to content, difficulty, and type of response required.

For time and attitude, Campbell and Stanley Post test-Only Control Group Design Number Six was used.⁶ Students indicated the time they started and finished the exercise manual, and responded to a Likert-type attitude appraisal form after they completed their exercises. The students did not put their names on the appraisal form.

Analysis of the Data

The statistical analysis for this study involved a comparison of mean scores of the control and experimental groups, with t-tests being used in the comparisons. Computations for the study were made using the Statistical Package for the Social Sciences.

Depending on the F value, which measures homogeneity of variance, one of two estimates was used for the t values. If the variance was homogeneous, a separate variance estimate was used. In contrast, if the variance of the two groups was heterogeneous, a pooled variance estimate was used. One of these two estimates provided the appropriate t value.

Carrying the statistics further, a significant t value would conclude the means to be significantly different. Conversely, a non-significant t value would conclude they were not significantly different.

In considering achievement, an F value of 1.34 was computed, which was not significant. As a result, a pooled variance estimate using 104 degrees of freedom and a .05 level of significance yielded a t value of -.56, also not significant. It was therefore concluded that the mean gain scores of the two groups were not significantly different.

In regard to time, the F value of 2.36 was significant, and it was concluded that the variance of the two groups was heterogeneous. Consequently, a separate variance estimate with 93.60 degrees of freedom was used, resulting in a t value of 3.29. The t value was significant at both the .05 and .01 significance level. It was concluded that there was a significant difference between the two groups, with the experimental group, the group using slides, requiring less time. The mean scores were 69 minutes for the slide group, as compared to 82 minutes for the direct observation group, a time savings of 16%.

Finally, attitude was measured using a five-question appraisal form. Each of the questions were rated on a Likert-type scale from one to six. Using a .05 level of significance the following t values

were reported: clarity of objectives .39, interest of the learning activities 1.03, difficulty of the unit -.09, clarity of instructions 1.97, and overall rating 1.59. None of these values were significant; there was no significant difference between the two groups regarding attitude.

Conclusions

A visual media format can be effectively used in place of a hands-on experience. The slide format was shown to be more effective in time needed to learn about tools. In addition, there were no significant differences for achievement and/or attitude when compared to the hands-on approach.

Overall, the slide format was an effective method for presenting instructional materials. This has special application for reference materials, but could also be applied to other library services as well. On a broader scale, this method could be applied to general library and bibliographic instruction programs.

Notes

1. Gain score is the difference between pretest and post test scores.
2. Mager, Robert F. *Preparing Instructional Objectives*. Palo Alto, CA: Fearson Publishers, 1962.
3. Bloom, Benjamin S., ed. *Taxonomy of Educational Objectives. Handbook 1: Cognitive Domain*. New York: McKay, 1956.
4. Russell, James D. and Kathleen A. Johanningsmeier. *Improving Competence Through Modular Instruction*. Dubuque, Iowa: Kendall-Hunt Publishing Company, 1981.
5. Campbell, Donald T. and Julian C. Stanley. *Experimental and Quasi-Experimental Designs for Research*. Chicago: Rand McNally College Publishing Company, 1963.
6. *Ibid.*