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ABSTRACT

This study was conducted to investigate the cultural implications involved in introducing individualized instructional techniques in a developing country, and to assess the effectiveness of slide-tape methods on cognitive, affective, and production quality variables, using a combination of standard evaluation procedures and experimental design. An informative slide-tape show was presented to high school teachers with the intent of increasing their knowledge of and changing their attitudes toward individualized instruction. The presentation included 15 minutes of audio description accompanied by supporting visuals--photos, drawings, and captions--covering four features of individualized instruction: basic characteristics of generation and effectiveness, the advantages for student learning, the advantages for teacher involvement, and the specific role of the teacher. The production was found to have significantly increased learning and positively altered attitudes, especially for more experienced teachers: current teacher-training programs were found to have discouraged alternative education. While generally receptive, teachers still could not envision their role in implementing individualized instruction. (Author/MER)

Attitude Change in a Developing Country Toward Individualized Instruction

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Abstract

Implementation of instructional innovations in developing countries as Venezuela are usually disasterous. Negative attitude toward change has been traced to misunderstanding, in this case toward individualized instruction. High school teachers were presented an informative slide-tape presentation in an attempt to increase knowledge and thus change attitude. A unique combination of experimental and evaluation designs were employed. The production was found to significantly increase learning and positively alter attitude, especially with more experienced teachers. Present teacher-training programs were found to discourage alternative education. While generally receptive, teachers still could not envision the realization of their dynamic role implied by individualized instruction.

The aim of the present study was twofold: 1) to investigate the cultural implications involved in introducing individualized instructional techniques in a developing country, and 2) to assess the effectiveness of slide tape methods on cognitive, affective and production quality variables using a unique combination of standard evaluation procedures and experimental design.

When an instructional innovation is developed, tested and found superior to previously employed methods, the authors generally call upon the innovation's treatment of specific learning variables as accounting for the improvement (Hilgard & Bower, 1975). However, replication of results is usually difficult or impossible because the innovation has recognized subtle environmental variables unique to the experimental setting. It is difficult to operationalize even a well defined innovation in a different setting for the same reason. Therefore, educational researchers repeatedly find themselves reinventing the wheel with apparent, generalizable results. Individualized instruction as a method has perhaps suffered more from this phenomenon than any other popular technique (Charles, 1976).

Hernandez (1977) has recently demonstrated that any attempt to generalize the efficiency of individualized instruction to countries outside the U.S. and Canada must recognize significant cultural barriers. In particular, Venezuelan teachers and students have been found to harbor widespread misunderstanding of the purpose and function of individualized instruction. Failure to recognize this fact led to the extremely costly error of attempting to introduce an Open University System in Venezuela. A method which has met with phenomenal success in England failed completely in Venezuela simply because educators and the populous viewed

such methods as grossly inferior (Resumen, 1979). Qualified students were willing to wait up to five years to be admitted to the National University rather than take courses via the Open University. The Keller Plan, introduced in 1974, has also failed to produce desired results despite the similarities between the U.S. and Venezuela regarding instructional demands.

Existing and projected educational facilities in many developing countries such as Venezuela cannot meet the growing need for skilled professionals in industrial, civil service and educational fields. The only apparent solution is a gradual change in attitude toward instructional alternatives which subsequent employment experiences verify. Loucks & Hall (1977), Dwyer (1977), and Rutherford (1978) maintained that the primary reason for negative reactions typified by the Venezuelan situation is lack of information.

The authors recognize that a change in attitude of the magnitude suggested here is an extremely complex issue which would require cooperation from all sectors of society. Nevertheless, the intent was to demonstrate that a well-conceived and well-produced slide-tape presentation could affect some impact on Venezuelans, however small, and that information was indeed a critical variable. The research design was therefore broken into two basic components: a) the effective design of a slide-tape presentation based on techniques from the most recent research, and b) the assessment of the media's effectiveness on three different but interrelated variables; information gain (cognitive), attitude change (affective), and production quality (aesthetics). In order to define more precisely the interrelationship between information and attitude, the cognitive and affective components were further subclassified into

four features of individualized instruction, a) the purported improvements which individualized instruction offers the educational system, b) and c) advantages for the teacher, and student, and d) the role of the teacher within the system. It was hypothesized that the slide-tape would lead to a change in attitude, and that younger and less experienced teachers would be more receptive to individualized instruction as an alternative.

Method

Subjects

High school teachers currently working in Caracas were selected for several reasons. First, it is teachers who implement instructional techniques, and ultimately, it is their attitude which determines at least the short-term success of any given procedure. Secondly, high school functions as a preparation for adult life, where the curriculum offers the students ever-expanding choices. Once the students have mastered the tools necessary for self-instruction in elementary school, the confidence and effectiveness of individualized instruction must be cultivated at this level. Finally, teachers at the high school level have been found to be highly resistant to instructional change for a variety of academic and social reasons (Hernandez, 1977).

Design

The study utilized both a research-based production design and an experimental/evaluation research design. Slide-tape was selected as an effective instructional medium a) for attitude change (Wittich & Schuller, 1973), b) for attention maintenance (Kinder, 1959), and c) for its correspondence with the intended learning outcome (Levie & Dickie, 1973).

The research design was subdivided into three questions regarding cognitive, affective and production quality outcomes. Due to the possible

confounding influence of the cognitive and affective factors, the affective questionnaire was provided to one-half of the subjects prior to the presentation, the others attending to placebo materials, and the remaining half after. Pre and post-tests were administered to all subjects. The design was thus a 2 Attitude (questionnaire before vs. questionnaire after instruction) x 2 Test Position (pre vs. post-test) with repeated measures on the Test Position factor.

Materials

The slide-tape presentation contained fifteen minutes of audio description accompanied by supporting visuals (photos, drawings and captions), covering four features of individualized instruction cited earlier: 1) basic characteristics of generation and effectiveness, 2) the advantages for student learning, 3) the advantages for teacher involvement, and 4) the specific role of the teacher.

Pre and post-tests each contained 21 items directly drawn from the presentation content, and were written so as to measure comprehension (Anderson, 1972). Parallel forms were also created for each test to control for item order.

The affective questionnaire consisted of 33 items which students responded to on 5-point Licket-type scales for degree of agreement with the statement. The individual statements were also constructed in both positive and negative forms to avoid response set (Tuckman, 1972). All statements dealt directly with one of the four features cited above.

An information sheet was also constructed to gather basic biographical information and teachers' opinions on the program, its effectiveness, weak points and its production qualities.

Procedure

The teachers attended a pre-arranged session on a volunteer basis, and once assembled were each given a pre-packaged set of materials, and read basic instructions regarding the procedure. The materials were packaged such that the subjects were randomly assigned to the two experimental groups. They were told that they would be completing a variety of different tasks to eliminate questions regarding procedural differences. Once all had completed the questionnaire or placebo, the pretest was given, and the presentation shown, followed by a one-minute interpolated task of simple arithmetic and the posttest. Parallel form assignment was also completely counterbalanced when the materials were packaged. The information sheets were then completed, followed by the completion of the questionnaire or placebo by alternative groups. Starting and ending times were recorded for each of the seven stages.

Results

Again, the results were sub-divided into three categories: instructional effectiveness, attitude change, and production quality.

Instructional effectiveness

Tests were scored for number correct. T-tests on both the equivalency of parallel forms, and the effect of the questionnaire having been answered before the presentation yielded no differences. An analysis of variance on the Test Position factor yielded a significant difference ($F(1,28) = 15.08$, $p < .05$). No other effects were significant.

Two biographical factors were also compared with test performance: age and teaching experience. Employing both as blocking variables, both age and teaching experience were found to effect learning, ($F(2,28 = 4.15$, $p < .03$) and ($F(2,28) = 5.96$, $p < .01$) respectively. Post hoc Newman-Keuls showed that the oldest teachers performed better than the

two younger groups, while increasing teaching experience led to higher scores among all groups.

Affective Change

Questionnaire items were scored utilizing the 5-point scale, adjusting for the positive and negative statements. Analyses were conducted on the four sub-categories as well as overall attitude.

The comparison between the experimental and control groups yielded a marginally significant difference ($t = 1.64$, $p < .056$, $df = 28$) in favor of the experimental group. A statistically significant positive change was also observed in the "advantages for the teacher" and "advantages for the student", ($t = 2.38$, $p < .01$, $df = 28$) and ($t = 1.73$, $p < .05$, $df = 28$) respectively. The "advantages for utilizing individualized instruction" reached marginal signifigance ($t = 1.61$, $p < .059$, $df = 28$).

Comparisons on the age and teaching experience factors yielded no difference for age, but a significant effect for teaching experience ($F(2,28) = 4.76$, $p < .02$). Newman-Keuls tests ranked the means whereby the most experienced expressed a more positive attitude than the other groups.

Production quality

In rating the production 97% found it interesting. Only 6% felt that any of the presentation was confusing or too fast, and all teachers cited one of the main objectives as the main point. While a number of other questions provided additional information about the specifics of the presentation, the vast majority reacted favorably.

Discussion

The results supported the hypothesis that a well-designed slide-tape

presentation could positively affect the attitude of Venezuelan high school teachers toward individualized instruction.

Because the content of the presentation was largely information about the features of individualized instruction, and because the presentation was the only manipulated factor differentiating the experimental and control groups, it was concluded that information does play an important role in an individual's attitude development. The teachers showed a significant increase in knowledge (from approximately 50% to 75% of criterion), and later expressed a more positive attitude, especially regarding specific areas discussed below.

The age and teaching experience variables did not, however, meet our initial expectations. On the whole, while age and teaching experience made little difference on pretests, or on the control group's attitude responses, as both increased, so did their learning and positive attitude within the experimental design. We had suspected that more recent graduates from teacher-training programs would be more knowledgeable, more positively inclined, and more flexible regarding individualized instruction. Quite the contrary appeared to have surfaced. Apparently recent graduates have not been exposed to alternative educational techniques any more than teachers who completed teacher-training seven or more years ago. In addition, the recent graduates appeared less flexible, perhaps not having yet been tempered by experience. These results were disturbing because of the apparent failure of training programs to be innovative, but promising in the sense that teachers themselves expressed the need and desire for such changes (conclusions borne out in the information sheet responses).

Attitude changes were also confined to the advantages of individualized instruction, particularly for the student. The teachers remained unconvinced

that their roles as directors of learning, with greater freedom to assist and supplement, would ensue. Nevertheless, the more experienced teachers, whom one might expect to be hardened by reality, were again significantly more receptive to the possibilities.

Educational implications drawn from these data were that differences do exist between developing and developed countries in information, but that standard forms of information dissemination can be effective in breaking down the barriers. Specifically, teacher training must address itself to alternative forms of education like individualized instruction, and ideally develop working models as demonstrations of the possibilities for society.