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ABSTRACT
 An external evaluation was conducted of the
 Picturepages television work-along program in Kentucky. The program
 consisted of 100 televised lessons and booklets, and was given to 237
 preschool children. The lessons presented "games" which were designed
 to develop cognitive concepts and skills. Both process and outcome
 evaluations were made. Process evaluations assessed whether televised
 portions and booklet distributions were implemented according to
 plan. Booklets were distributed as intended but several factors
 affected availability of the televised component. Outcome evaluations
 focused on the program's effect on children's learning readiness,
 attitudes, and skills, and on parent-child interactions in home-based
 and preschool enter-based studies. The results of the home-based
 study indicated that parents felt children learned from the programs,
 but the center based study offered no support for program effects on
 children's learning readiness skills. Constraints on the program were
 discussed and several recommendations were offered. (Author/RD)

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Program for Preschoolers

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Evaluation of a Televised Work-Along Program for Preschoolers

This paper reports on the third-party evaluation of a statewide implementation of the Picturepages program in Kentucky. This innovative preschool program presented through public media was implemented by the Kentucky Association of Community Action Agencies (KACAA) with the sponsorship of the Community Services Agency (CSA), Region IV. Research for Better Schools (RBS) designed and conducted an independent evaluation. The challenges in conducting such an evaluation were many, given the statewide public dissemination of the program, the preschool audience, and the relatively brief treatment period (20 weeks). An extensive report on this evaluation has also been prepared by RBS (Dusewicz & Coller, 1978).¹

The Picturepages Concept

The Picturepages series was conceptualized and designed to meet the critical need for early childhood education in the cognitive domain, a need which has been identified and widely documented. Picturepages was developed and copyrighted by Computern, Inc. of Pittsburgh to address these needs by providing a structured learning experience for children,

¹This paper is a condensed version of a much larger two-volume report, copies of which will be made available through the ERIC system: An Evaluation of the Kentucky Picturepages Program (Dusewicz & Coller, 1978).

utilizing a presentation mode (television) that makes the program available to most children. In addition, multi-colored illustrated newsprint booklets are provided to each child so that they may work along with the activities presented on TV.

Picturepages is usually presented as a segment of a children's TV program with the local personality showing the children, step-by-step, how to use their Picturepages for that day. Though colorful and fun for children to use, Picturepages is conceived as a very real teaching tool that involves the child in specific learning activities. While the TV host makes the daily Picturepages lesson presentation, the preschool child, alone or with his/her parent, actively follows along at home by using a Picturepages booklet which is distributed in advance of the broadcast through public distribution points. Each booklet contains five daily lessons which coincide with the TV broadcasts for that week. Each booklet also contains a section explaining the lessons and a section listing activities to be used by parents or others to supplement the concepts and skills presented by the TV host. This latter feature enables the child and parents, or teachers, to continue playing the "game" to develop further the concepts and skills presented in the TV program.

The Picturepages concept was developed with an understanding of the importance of early development of cognitive skills as the basic tools of learning. It recognizes the need to utilize the environment of the child in developing skills: home, parent, and peers. It recognizes the need to reach large numbers of preschool children and the efficacy of using

the medium of television as the vehicle for accomplishing this end. It acknowledges the specific need to reach lower income groups and disadvantaged children.

The first Picturepages series went on the air commercially in 1973. This was followed a year later by the first of a series of Community Action Agency sponsored programs using the Picturepages concept. Now, within the span of just a few years, a total of six urban cities (Pittsburgh, PA; Columbia, SC; Memphis, TN; Birmingham, AL; Miami, FL; Little Rock, AK) and the entire Commonwealth of Kentucky have implemented the Picturepages Program.

The Kentucky Implementation of Picturepages

In adapting the Picturepages concept for use in Kentucky, preparation of a specially selected set of materials and broadcasts was necessary as well as the institution of a number of organizational mechanisms for implementing the program. While some of these mechanisms were similar to those used in previous Picturepages implementations, others represented new approaches to handling the large scale program operations required.

The Kentucky program represented the first state-wide adaptation of Picturepages. No less than 12 independent public and private organizations and groups of organizations were involved in the implementation of the Kentucky Picturepages program. The Community Services Administration (formerly OEO) funded a majority of the program. Compulearn, the originator of Picturepages, developed, produced, and managed primary delivery of 20 weeks of a specially selected set of Picturepages booklets.

In Kentucky, delivery of the booklets to distribution centers was handled by a private trucking firm. The Kentucky Association for Community Action Agencies (KACAA) coordinated the program state-wide, created awareness for it, and served as a public information clearinghouse. Twenty-one (21) regional community action agencies--generally identified with sponsorship of community programs in nutrition, home improvement, child care, job training, Headstart, social and health services--served as distribution sites for Picturepages booklets. Other distribution agencies included Long John Silver's Seafood Shoppes, public sites (e.g., schools, libraries, and Department of Human Resources) and individual commercial, professional, and other private establishments (e.g., stores, doctors' offices, and churches, etc.).

The Abbott Advertising Agency, national advertising headquarters for Long John Silver's Seafood Shoppes, served as liaison between the shoppes serving as distribution points and the other participating agencies. The Abbott Agency also developed and arranged sponsored commercials which promoted the program. Seventy-five (75) individual shoppes, located throughout Kentucky, served as distribution sites for the Picturepages booklets.

Happy and Froggie, two TV personalities, provided televised lessons for each of 100 picturepages. WTVQ of Lexington, over whose station the Happy and Froggie Show is normally broadcast, videotaped the 100 five-minute lessons and supplied the tapes to other stations to be involved in the program. The televised lessons themselves were to be broadcast

over both the public KET Network, consisting of 20 stations and transmitters, and private stations: WTVQ in Lexington, WDRB in Louisville and WKYH in Hazard.

Research for Better Schools was under contract with KACAA to conduct an evaluation of the Kentucky Picturepages implementation. The evaluation was to address implementation process questions and program impact questions.

Methodology

The evaluation plan called for both process and outcome evaluation components. The outcome component was further divided into a home-based study and a center-based study. The procedures employed in each component are briefly described. The primary focus was upon the question of program effectiveness and secondarily upon program implementation as a context for interpreting outcomes.

Process Evaluation. This component was intended to answer the following questions:

- Is the televised portion of the program implemented according to plan?
- Is the materials portion of the program implemented according to plan?

Over the course of program implementation, attempts were made to assess the progress of materials dissemination including numbers of booklets received and distributed and reports of difficulties from each dissemination point in getting booklets to the target population. Attempts were also made to assess the extent of proper implementation of the television broadcasts over the program period.

These implementation monitoring activities were conducted by providing all distribution points with forms for reporting the flow of booklets. A sample of distribution centers was also contacted by telephone to review their experiences. The TV broadcasts were monitored primarily by the nursery schools involved in the center-based outcome evaluation component.

Outcome Evaluation. The outcome evaluation was primarily intended to answer the following questions:

- Does the program affect children's learning readiness attitudes?
- Does the program affect learning-related parent-child interactions?
- Does the program affect children's learning readiness skills?

Two evaluation approaches were utilized in assessing program effectiveness: A Home-Based Study and a Center-Based Study.

The Home-Based Study was conducted to determine program effects on children's learning readiness attitudes and on learning-related parent-child interactions. This study involved parent responses to a single-page survey questionnaire. A total of 50,000 questionnaires were distributed throughout Kentucky.

The Center-Based Study, employing a true-experimental design, was focused upon determining program effects upon children's learning readiness skills. This study involved a total of 237 participating children aged two to five randomly assigned to experimental and control subject

groups. These subjects were drawn from several child care center sites within the state. All participants were pre- and posttested on a variety of carefully selected instruments.

In every evaluation study the selection of instruments to assess the effects of the experimental treatment is of central importance--in this study it was thought to be crucial. Not only was the Kentucky Picture-pages Program to be of rather low intensity (8 1/3 program hours distributed over 20 weeks and many subject areas) but the group to be used as a control group was to receive an educational treatment as well. It was anticipated that if any differences were to occur, they would be small and closely tied to the content of the program itself. The instrument selection was then conducted in accordance with a well-developed selection model.

The following norm-referenced measures were employed: the Peabody Picture Vocabulary Test, the Cooperative Preschool Inventory, and the Walker Readiness Test for Disadvantaged Preschool Children. Three domain-referenced measures were also selected from the Early Childhood Inventory collection: the Propositions Inventory, the Relational Concepts Inventory, and the Shape Name Inventory.

Results

The process and outcome results are presented separately below.

Process Evaluation. The results related to booklet distribution were limited due to incomplete data. Many of the distribution centers were unable to maintain the prescribed records. Several distribution problems

were noted and referred to KAGAA for remediation. It appeared that most of the booklets were distributed as intended.

The televised portion of the program was implemented statewide for the first 10 weeks and on a limited basis for the second 10 week period. After 10 weeks, the KET Network of 13 stations and seven translators decided to discontinue the Picturepages broadcasts. Except for cable TV accessibility, this left only three remaining broadcast stations located in Louisville, Lexington, and Hazard. Further, the Louisville station changed the broadcast time by five minutes and the Lexington station dropped its morning broadcast of Picturepages. These changes seriously affected the availability of the televised component of the program.

Prompted no doubt by the consequent lack of broadcasts to several outlying areas in Kentucky, there was a simultaneous decision by the Long John Silver's Seafood Shoppes to discontinue distribution of the picturepages booklets in areas other than the three indicated above. This left approximately half of the original shoppes participating during the second 10 weeks of the program. The second half of the implementation was thus a substantially reduced version of the original plan.

Outcome Evaluation: The Home-Based Study yielded a total return of 1,067 questionnaires, or 2.13% of the 50,000 survey forms sent to primary distribution centers throughout the state. Results of single-item and inter-item tabulations produced the following principal findings:

- Children in the age ranges of two through seven (or older) participated in the program with the highest proportion of participants being four and five years of age.
- A large proportion of the respondents not only engaged in the follow-up activities described in the Picturepages booklets but also indicated that they actually teach their children more as a result of their involvement in the Picturepages program.
- Parents felt that it was easier to work with and teach their children as a result of their experience with Picturepages and this perception was highly associated with the number of weeks they engaged in follow-up activities.
- Children working with Picturepages at home seem to their parents to enjoy all components of the program: the booklets, the TV broadcasts and the follow-up activities.
- Children working with Picturepages at home seem to their parents to be learning from their involvement with the Picturepages program.
- A large proportion of the respondents indicated that they would want Picturepages to continue; fewer indicated that they would be willing to pay for the program.

In the Center-Based Study, after 20 weeks, 110 of the original 237 participating children had completed pre- and posttest data sets. Based on the test measures administered, a total of 18 variables were identified for analysis. Repeated measures analyses of variance were conducted on all variables utilizing the treatment by repeated measures interaction effect as the indication of treatment impact. Results of these analyses indicated no evidence of significant program effects with respect to any of the variables. If indeed the Picturepages program enhances children's

learning readiness skills, it was not evident in data obtained from the Center-Based Study.

Discussion

A major question addressed by this study was whether or not the Picturepages Program affects children's learning readiness skills. Results from both the home-based and center-based studies have pertinent implications.

In the home-based study, tabulations of responses on the Parent Survey indicated that nearly 80 percent of the children participating in the Picturepages program seemed to their parents to have learned from their involvement. While this may appear on the surface to be a considerable endorsement of the program's effectiveness, it is, in fact, difficult to place any great confidence in this finding. This is due to the lack of experimental control over the conditions under which the home-based study was conducted. There are at least two alternate and equally viable interpretations of the findings: (1) what parents may have been observing was a general maturational or growth effect in their children unrelated to program participation; (2) a "halo" effect produced by generalized enjoyment of the program and positive responses on other items may have been responsible for carrying over a positive response set to this item.

The center-based study offers no support at all for any program-induced effect upon children's learning readiness skills. Extensive analyses of pre- and posttest data on all relevant variables indicated no

statistically significant program vs. control differences which could be ascribed to the Picturepages experience. While the results from the home-based study should not necessarily be interpreted as supportive of the Picturepages program, results from the center-based study should not necessarily be interpreted as contra-supportive of the program. There were several methodological constraints upon conduct of the center-based study which undoubtedly mitigated against program effectiveness. These included the following: the ill-timing of program implementation to occur over the summer months which are typically characterized by high turnovers and vacations at child care centers; the poorly scheduled broadcast time for the TV segment insofar as viewing at the child care centers was concerned; and the administrative and staffing problems associated with conducting a controlled study in child care centers, involving the random assignment and segregation of children into experimental and control groups and maintaining the integrity of those groups.

An additional constraint was the program itself. The Kentucky Picturepages Program was designed as a 20 week sequence consisting of 100 five-minute televised work-along lessons. Discounting any of the follow-up activities, the program being studied was only 8 1/3 hours in duration with the lessons being distributed over a 20 week period. Without question, the Kentucky program was one of low intensity. Therefore, interpretations based on the results of this study may only be appropriate for low intensity programs of short duration; they do not necessarily allow one to generalize to, for example, a higher intensity, forty-week program involving the same content and approach.

Finally, it should be emphasized that part of this study took place in child care centers, where all children (experimental and control) received an educational treatment. This treatment probably produced educational effects which made the incremental effects of Picturepages harder to detect. This factor also means that results may not be generalizable to effects which would have occurred in a home environment.

Based on this evaluation experience with the Kentucky implementation of Picturepages several recommendations were offered:

- The Picturepages concept appears to have sufficient educational potential that its effectiveness should be studied further.
- Future evaluations of Picturepages should focus on determining effects under more intensive treatment conditions.
- A content analysis should be performed on each selected Picturepages sequence prior to its finalization in order to assure non-bias and uniformity of content emphasis from one program implementation to another.
- Prior to each implementation, field-testing of both broadcasts and booklets should be conducted on small samples for their entertainment and effectiveness value and to eliminate problems of production quality.
- Contracts, assurances or guarantees should be secured from both TV broadcast stations and booklet distribution centers for participation over the full duration of the planned Picturepages program and for full cooperation in providing feedback on the broadcast and distribution process as well as cooperation in any evaluation efforts.