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ABSTRACT

A children's television program "Sesame Street," is discussed. The objectives of this program is to promote the intellectual and social and cultural growth of preschool and kindergarten children. Specific goals include: symbolic representation, problem solving and reasoning, and familiarity with the physical and social environment. The target population consists of all children, three to five years old, with the disadvantaged child given primary concern. Materials used in the program included: (1) letters, numbers, and geometric forms, (2) problem solving and reasoning, including recognition of parts of the body, visual discrimination among objects or pictures, and understanding of relational concepts such as size, shape, position and distance; and (3) natural environment, including city and country, objects and people, family and home, rules of behavior and fair play. The program was evaluated and the results include the following: (1) The impact in most goal areas was both educationally and statistically significant; (2) Generally, younger children gained more than older children; (3) High viewers benefitted more than low viewers; and (4) High-viewing Spanish-speaking children from a disadvantaged community and with low pretest scores gained more than any other group. (Author/CK)

AIR-21900-12/71-TR(10)

PRODUCT DEVELOPMENT REPORT NO. 10

Contract No. OEC-0-70-4892

SESAME STREET

DEVELOPED BY CHILDREN'S TELEVISION WORKSHOP

Daniel W. Kratochvil

American Institutes for Research
in the Behavioral Sciences

Palo Alto, California

December, 1971

The research reported herein was performed pursuant to a contract with the Office of Education, U.S. Department of Health, Education, and Welfare. Contractors undertaking such projects under Government sponsorship are encouraged to express freely their professional judgment in the conduct of the project. Points of view or opinions stated do not, therefore, necessarily represent official Office of Education position or policy.

U.S. DEPARTMENT OF
HEALTH, EDUCATION, AND WELFARE

Office of Education
Office of Program Planning and Evaluation

PREFACE

This product development report is one of 21 such reports, each dealing with the developmental history of a recent educational product. A list of the 21 products, and the agencies responsible for their development, is contained in Appendix A to this report. The study, of which this report is a component, was supported by U.S. Office of Education Contract No. OEC-0-70-4392, entitled "The Evaluation of the Impact of Educational Research and Development Products." The overall project was designed to examine the process of development of "successful educational products."

This report represents a relatively unique attempt to document what occurred in the development of a recent educational product that appears to have potential impact. The report is based upon published materials, documents in the files of the developing agency, and interviews with staff who were involved in the development of the product. A draft of each study was reviewed by the developer's staff. Generally, their suggestions for revisions were incorporated into the text; however, complete responsibility for interpretations concerning any facet of development, evaluation, and diffusion rests with the authors of this report.

Although awareness of the full impact of the study requires reading both the individual product development reports and the separate final report, each study may be read individually. For a quick overview of essential events in the product history, the reader is referred to those sections of the report containing the flow chart and the critical decision record.

The final report contains: a complete discussion of the procedures and the selection criteria used to identify exemplary educational products; generalizations drawn from the 21 product development case studies; a comparison of these generalizations with hypotheses currently existing in the literature regarding the processes of innovation and change; and the identification of some proposed data sources through which the U.S. Office of Education could monitor the impact of developing products. The final report also includes a detailed outline of the search procedures and the information sought for each case report.

Permanent project staff consisted of Calvin E. Wright, Principal Investigator; Jack J. Crawford, Project Director; Daniel W. Kratochvil, Research Scientist; and Carolyn A. Morrow, Administrative Assistant. In addition, other staff who assisted in the preparation of individual product reports are identified on the appropriate title pages. The Project Monitor was Dr. Alice Y. Scates of the USOE Office of Program Planning and Evaluation.

Sincere gratitude is extended to those overburdened staff members of the 21 product development studies who courteously and freely gave their time so that we might present a detailed and relatively accurate picture of the events in the development of some exemplary educational research and development products. If we have chronicled a just and moderately complete account of the birth of these products and the hard work that spawned them, credit lies with those staff members of each product development team who ransacked memory and files to recreate history.

TABLE OF CONTENTS

LIST OF FIGURES

Figure

LIST OF TABLES

Table

PRODUCT DESCRIPTION

Product Characteristics

Name

Sesame Street

Developer

Children's Television Workshop

Distributor

National Educational Television, which served as the distributing agency for most national educational programming until 1970, distributed the first year of Sesame Street. The Public Broadcasting Service, created in 1970 by the federally funded Corporation of Public Broadcasting and given all distributive functions in Educational Television in the United States, distributed the second year and is distributing the third year of Sesame Street.

Focus

The general aim of this television program is to promote the intellectual and, to a more limited extent, the social and cultural growth of preschool and kindergarten children. More specific goals fall into the three large categories of (1) symbolic representation, (2) problem solving and reasoning, and (3) familiarity with the physical and social environment.

Grade Level

Preschool and kindergarten.

Target Population

The target population consists of all children, three to five years old. Within this group, the disadvantaged child was given primary concern. This concern is reflected in the program's attempt to teach learning skills to preschoolers in general and to promote equal educational opportunity for disadvantaged preschoolers in particular. The choice of the program's major characters and its basic set, simulation of an inner-city neighborhood, also relects this desire to reach the disadvantaged child.

Rationale for Product

Long Range Goals of Product

Sesame Street was begun as an experiment, and continues still on an experimental basis, with the primary long range goal of giving special educational enrichment to disadvantaged children. The success of this program brought a host of new responsibilities and opportunities to the Children's Television Workshop. The chances for expansion in many directions became both numerous and complex. They include: efforts to reach more of the disadvantage through field services; development of non-broadcast materials; production of a series of programs to improve reading; and foreign production. The greatest lasting influence of Sesame Street, and of the other programs produced by Children's Television Workshop, may well prove to be its effect on the development of television generally in the service of the public. This has been an implicit, if not explicit, long range goal of Sesame Street in particular and the Workshop in general.

Objectives of Product

Instructional objectives were divided into three main categories: (1) symbolic representation or letters, numbers and geometric forms; (2) problem solving and reasoning, including recognition of parts of the body, visual discrimination among objects or pictures, and understanding of relational concepts such as size, shape, position, and distance; and (3) natural and social environment, including city and country, objects and people, with features indigenous to each, and the family and home environment, together with simple rules of behavior and fair play.

Philosphy Behind Product

The program, as originally envisioned and as produced, combines entertainment value with solid educational matter. Education is the program's primary aim and entertainment the means; it attempts to teach a lower class as well as middle class audience; and expensive, popular production techniques are used to accomplish these goals.

This effort has been a response to several trends in education. Research has shown that the academic achievement gap between disadvantaged and middle class children shows up very early in the school years and increases dramatically in the higher grades. This widening gap, which is of increasing concern to educators, has made the disadvantaged child a crucial target in many educa-

tional efforts. There also is a growing belief that the learning process should be started earlier for all children and that educators no longer can ignore the first five years of a child's development.

The developers recognized that more families have television than have bathtubs, telephones, toasters, vacuum cleaners or a regular daily newspaper. The medium was there and only the message needed changing. They could respond to the need for preschool education by creating a classroom without walls, nationwide and expandable, capable of reaching into ghetto neighborhoods and remote rural outposts and of raising the level of education equally as far as possible for preschool children everywhere. Sesame Street was regarded as an experiment, but they felt it was an experiment with minimum risks and great possibilities.

Theories Supporting Product

Sesame Street was probably the most thoroughly researched and thought-out program in the history of American television. The general aim of the program--to promote the intellectual and social growth of preschoolers--was decided on quite early. The more specific aims regarding the educational content of the programs were determined by an advisory board working in conjunction with the production and research staff. Consequently, Sesame Street is probably based on a very complex mixture of various theories or parts of theories.

Seminars were held to bring together the views and suggestions of educators, psychologists, television experts, child development specialists, creators of film animation, filmakers, children's book writers, and advertising designers. The seminars dealt with various aspects of child education, including social, moral, and affective development; language and reading; mathematical and numerical skills; reasoning and problem solving; and perception. Out of these seminars came the formulation of a set of instructional goals for the programs.

Description of Materials

Organization of Materials

Each television program was constructed so as to include some learning materials for each of the three main categories of instructional goals--symbolic representation, problem solving and reasoning, and natural environment. Each program was composed of many segments using a wide range of production

techniques; learning units were packed into stories, skits, games, songs, and 30- and 60-second animation sequences patterned after commercial spots on television. The animation sequences were slipped into the program with no more warning or preparation than the viewer is given for the station-break spots on commercial television.

Many learning units were repeated, according to a carefully planned sequence, in the daily programs which were one hour long. Some units were repeated more than others; some were modified or eliminated as formative evaluation results dictated. The segmented or magazine format allowed units to be moved about in program sequence or to be moved to other programs.

During the first year, five hour-long programs were broadcast per week, for 26 weeks, making 130 programs, or 130 hours, in all. During the second year, 145 hour-long programs were produced and broadcast on a similar daily schedule for 29 weeks. During both years, typically a program was presented twice on one day during the week and then often repeated again on Saturday morning.

Format of Materials

Two types of materials have been produced: the broadcast materials, i.e., the television program, and non-broadcast materials. The program, itself, can be broken down into about 50 percent live, featuring the program's hosts or puppets, and 50 percent animation or live-action film and videotape. A typical program will include some cartoons, live-action film, puppets, singing, story reading, and sketches using actors--all of which are placed in the context of Sesame Street, a semi-realistic studio duplication of an inner-city street peopled by several men and women who are in fact the continuing hosts of the television program. A strong black image for the program was deliberately sought and from time to time was reinforced by guest appearances. Each year the format of the progrms is modified to reflect what is new and popular in the environment. Non-broadcast materials included books, filmstrips, records, and supplements to be used with the show.

Content of Materials

As suggested under Objectives of the Product, the content, i.e., the subject matter, dealt with in Sesame Street included some important areas of preschool development. Areas included: (1) the symbolic representation or letters, numbers, and geometric forms; (2) problem solving and reasoning, including recognition of parts of the body, visual discrimination among objects or pictures, and understanding of relational concepts such as size,

shape, position and distance; and (3) natural environment, including city and country, objects and people, family and home, rules of behavior and fair play. The series of pictures in Figure 1 on the following page gives a feeling for the format and content of a typical segment of a Sesame Street program.

Cost of Materials

It cost about $8 million to produce the first year of Sesame Street and about $6 million for the second year. This initial investment should not be considered part of the cost to user any more than the funds obtained from the government for developing, e.g., a science program, should be considered as part of the cost to the user. Once developed, what does it cost the user either to purchase and continually update the product or to support continual updating and dissemination of the product? Sesame Street is being modified continually and developmental costs are still confounded with broadcast/updating/dissemination costs; these latter monies are the expenses that will determine the cost to user of Sesame Street. As long as the government is funding the broadcast/updating/dissemination costs, these costs will be part of the user cost. In short, it will cost the user more than the effort to turn on his television set, but all television does in one way or another.

Recent estimates made by CTW indicated that two seasons of Sesame Street (i.e., 275 programs) cost each viewer approximately $1.30. This cost should not be compared to those of classrooms programs, Head Start, etc.; the latter type of programs are usually much more comprehensive and should not be considered as alternates to Sesame Street.

Procedures for Using Product

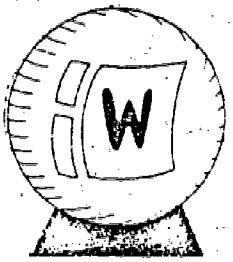
Learner Activities

A statement of specific behavioral objectives guided the development of the learning units which make up the Sesame Street programs. A variety of teaching strategies and production techniques were employed in implementing the objectives. Humor and incongruity were used to encourage language play and to increase attention and motivation. Exact repetitions of short program elements, in the manner of commercial advertising, were frequently employed to promote reinforcement of learning through rehearsal away from the instruction, i.e., the television program. Repetition with variation either of format or content was thought to promote generalization of learning and a literacy in certain

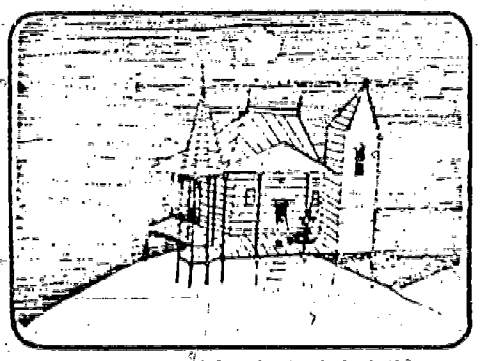
Figure 1. Typical Segment of Sesame Street

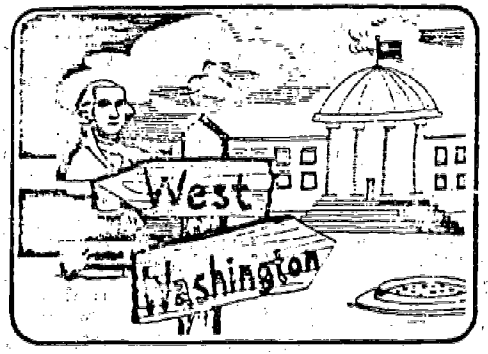
The Story of...

Wanda The Witch

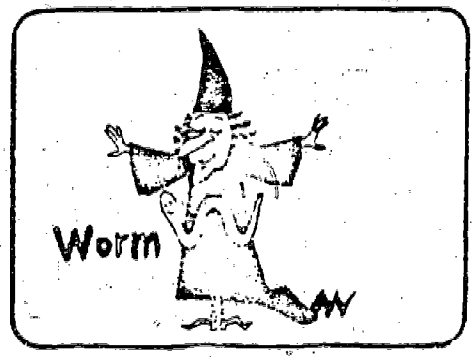


This is how "Sesame Street," the new daily TV series for preschool children, teaches one of the letters of the alphabet. Cartoonist Tee Collins and Anne Bower, associate producer at the Children's Television Workshop, collaborated in the creation of this catchy, 60-second animated cartoon which not only introduces the shape of the letter but uses many words which employ the sound as well.

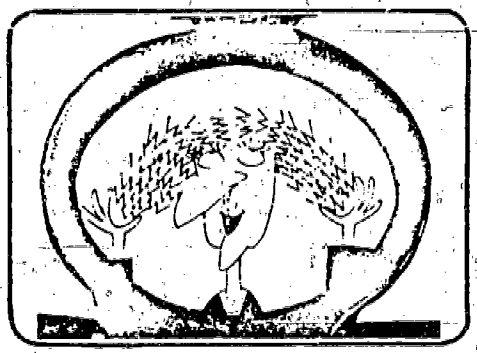




Wanda the Witch lived somewhere west of Washington.

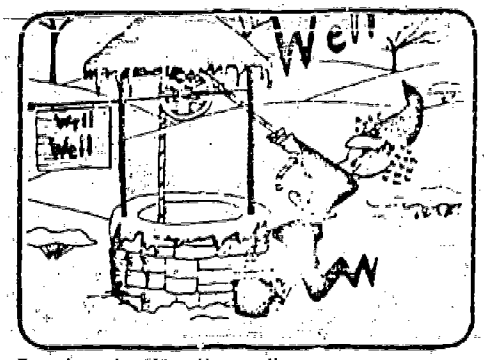


Around her waist instead of a belt she wore a worm.



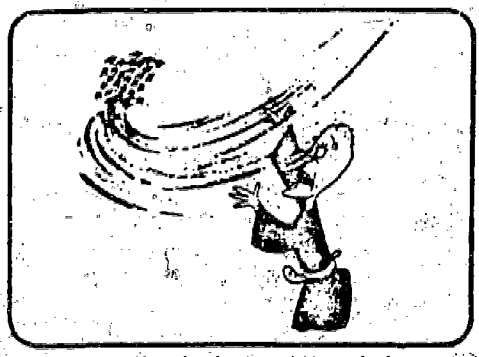
Wanda had a pet weasel. And on her head a wiry wig.

One Wednesday in the middle of winter, Wanda walked to the well to get water to wash her wig.

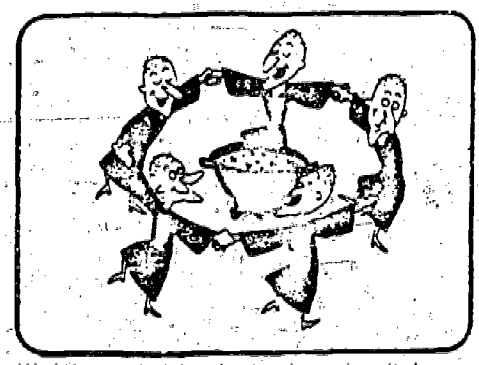


But the wheel on the well was worn and Wanda grew weary.

So she waved her wand and her washtub filled with warm water.



But just as Wanda dropped her wig into the warm water, a wild wind whipped the wig from her hands and blew it away.



Which taught Wanda this lesson: witches who wash their wigs on windy winter Wednesdays are wacky.

auditory and visual conventions constituting special strategic and structural learning sets. Overt verbal participation, often a product of repetition, was included as it contributed to learning reinforcement and often eventuated in overt imitation and sometimes overt anticipation of instruction repeated exactly. The use of comically exaggerated alliteration was designed to permit the viewer to infer rules about language. Thus the program was designed so that the viewer would do more than just watch. Often the extent of his participation was dependent upon the adult support that was available to help him.

Teacher/Parent/Community Involvement

Within CTW the Community Relations Division is concerned with involving national groups, including civic, government, and private organizations in community based efforts of CTW. The Field Services Department is a part of this Community Relations Division. Its 35 field coordinators assigned to 14 metropolitan areas and its dozen headquarters staff members are implementing a most exciting grassroots effort. Their primary purpose is to encourage learning activities built around the program, enlist community support, and establish viewing centers in order to boost the audience for Sesame Street to a higher percentage of the nation's 12 million preschoolers.

The field coordinators have conducted numerous in-service orientation workshops for teachers and training workshops for parents who volunteer to help in viewing centers. From livingrooms to school auditoriums, the workshops incorporate a brief history of CTW, explanation of the show's curriculum goals, importance of teacher and parent involvement, and instruction in follow-up activities. Workshop activities and CTW films show how the various materials can best be utilized to reinforce the broadcast's educational goals. Often resource kits are used to develop lesson plans to accompany the programs. Parent volunteers learn more about the neighborhood, its people, their role, and the community needs. Home visits are frequently a part of the volunteers' activities. In many cases, the volunteers who man the viewing centers scout for additional sites and form their own home-viewing groups. In schools where students receive daily Sesame Street instruction, teachers use the support materials to integrate the program with other daily activities.

Special Physical Facilities or Equipment

All that is needed to use Sesame Street is a television set.

Recommended Assessment Techniques for Users

No specific assessment techniques are recommended to or provided for the user.

ORIGINS

Key Personnel

Originally, the key personnel involved in the development of Sesame Street consisted of a nucleus of a half dozen or so people. Dr. Lloyd N. Morrisett, then Vice President of Carnegie Corporation and now President of the John and Mary Markle Foundation and Chairman of the Children's Television Workshop Board of Trustees, initiated the first steps that eventually led to Sesame Street by asking Mrs. Joan Ganz Cooney, then a producer at Channel 13, the Public Television Station in New York, to examine the potential uses of television for preschool education. Since then, Mrs. Cooney, now President of the Children's Television Workshop, has been the mastermind and driving force behind Sesame Street. David D. Connell, Vice President and Executive Producer of Children's Television Workshop, Mr. John Stone, Senior Producer and Head Writer, and Mr. Samuel Gibbon, Jr., now Senior Producer of the Reading Program, spearheaded the production activities. Research efforts were coordinated by Dr. Herald S. Lesser, Bigelow Professor of Education and Developmental Psychology at Harvard University Graduate School of Education and Chairman of both the Children's Television Workshop National Advisory Board and the Children's Television Workshop Research Advisory Committee, and Dr. Edward L. Palmer, Vice President and Director of Research for Children's Television Workshop. Since the early development stage, the number of key personnel and the total number of staff have grown tremendously to capitalize on new opportunities which Sesame Street has generated. Especially significant are the efforts of the Community Relations Division which is directed by Mrs. Evelyn P. Davis, Vice President.

Source of Ideas for Product

There were approximately 12 million three-, four-, and five-year-olds in the United States in 1966. Ninety-four percent of the three-year-olds, 81

percent of the four-year-olds, and 20 percent of the five-year-olds did not attend any form of school. These statistics would not have bothered educators in the 1950's; the sandbox rather than the classroom was considered the province of the preschooler, and educators believed that the first five years of a child's life were predominantly a time for social and emotional adjustment. This all changed in the 1960's. The educational problems of the disadvantaged child turned a spotlight on the preschool period. Research had shown that the academic achievement gap between disadvantaged and middle class children shows up very early in the school years and increases dramatically in the higher grades. This widening gap made the disadvantaged child a target in almost all educational efforts. The earlier the gap between him and the middle class child could be narrowed, the easier the task would be and the better his educational chances. Thus, interjecting intellectual stimulation into the early years of the disadvantaged was advocated by many educators.

In addition to the urgent problems of disadvantaged children, there were other reasons for the growing interest in early education. In an increasingly complex age, burdened with more information and demanding more sophisticated ways of thinking than ever before, many educators felt that children should start learning how to learn sooner. The first five years of a child's development could no longer be ignored. Educational findings were proclaiming that half of a child's growth in intelligence will have occurred by the time he reaches four years.

The cost of putting 12 million children in this age group in classrooms was clearly prohibitive. The estimated cost of sending only one-half the program's potential audience to school was $2.75 billion. The cost of sending 465,000 youngsters--less than one-twentieth of the potential audience--to eight weeks of Head Start Programs was $127 million. Confronted with the need for preschool education, the time was fertile for the germination of new creative ideas employing modern media.

Television was one such media; the television screen was one blackboard that was almost universally available. While there was a shortage of schoolrooms, there was no shortage of television sets. More families had television than had bathtubs, telephones or a regular daily newspaper. Even in households with less than $5,000 income, 90 percent owned a television set. Furthermore, children under the age of six watched it upwards of 30 hours a week. Existing television programs for children were mostly entertainment,

largely lacking in educational content, or else were aimed primarily at a middle class audience. In short, the medium was there; it was only the message which needed changing.

Evolution of Ideas for Product*

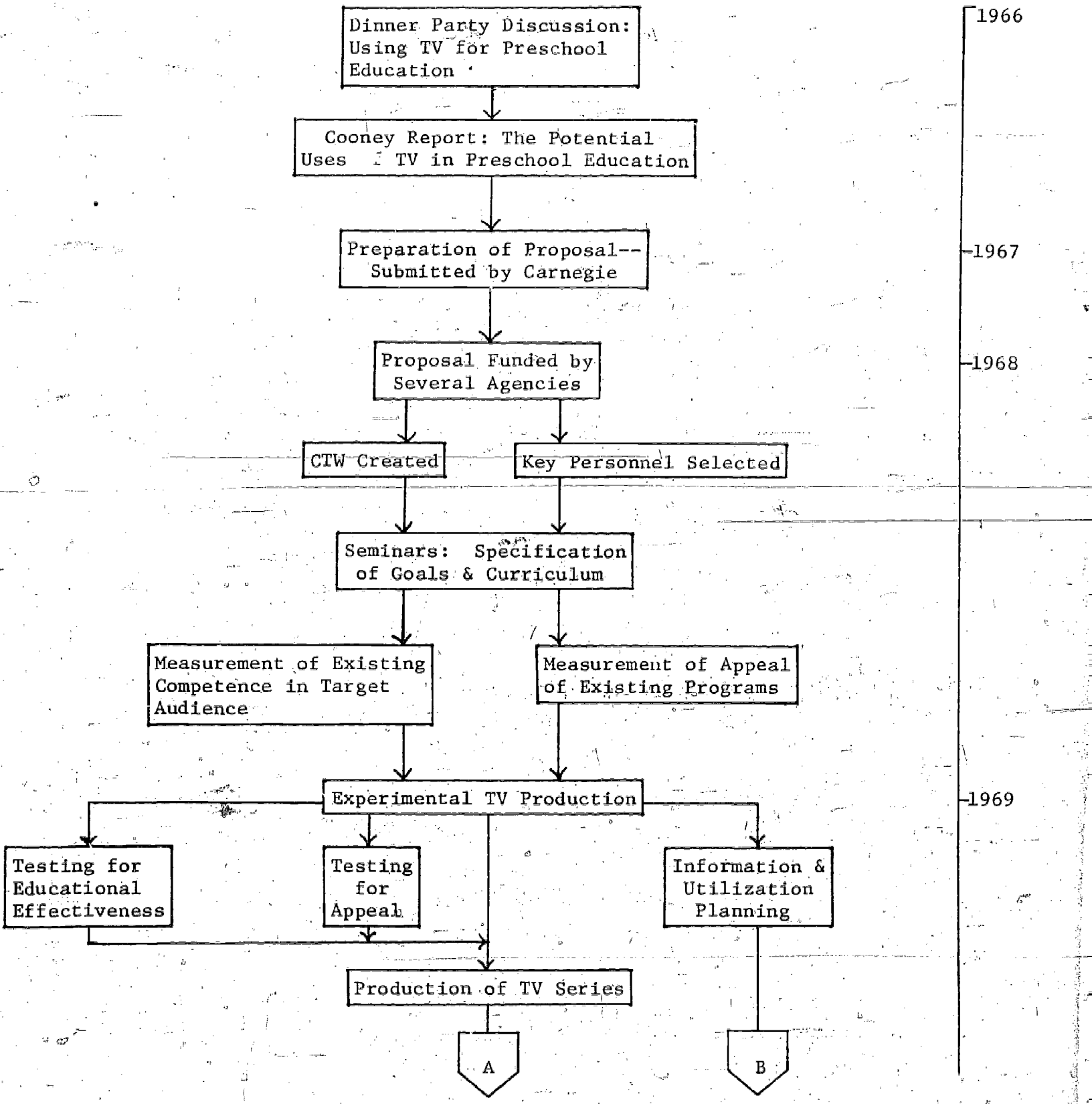
The germination of Sesame Street begar at a dinner party in Mrs. Cooney's home in February 1966. The subject of television's educational potential was discussed and one of her guests, Dr. Lloyd Morrisett, then Vice President of the Carnegie Corporation, asked her a few days later if she would be interested in doing a study of the possible exploitation of public television in preschool education. Mrs. Cooney accepted the challenge and, in making her study, she was able to identify three phenomena surrounding the preschooler to which no one had really given much thought. These phenomena were (1) 96 percent of all families in the nation owned television sets; (2) the set was on as many as 60 hours a week in homes with youngsters; and (3) researchers and educators in the early childhood field more and more believed that education should begin earlier than the traditional age of five or six. She also concluded that there was no doubt that youngsters were learning from television; most young children could recite the latest television commercials and sing the jingles.

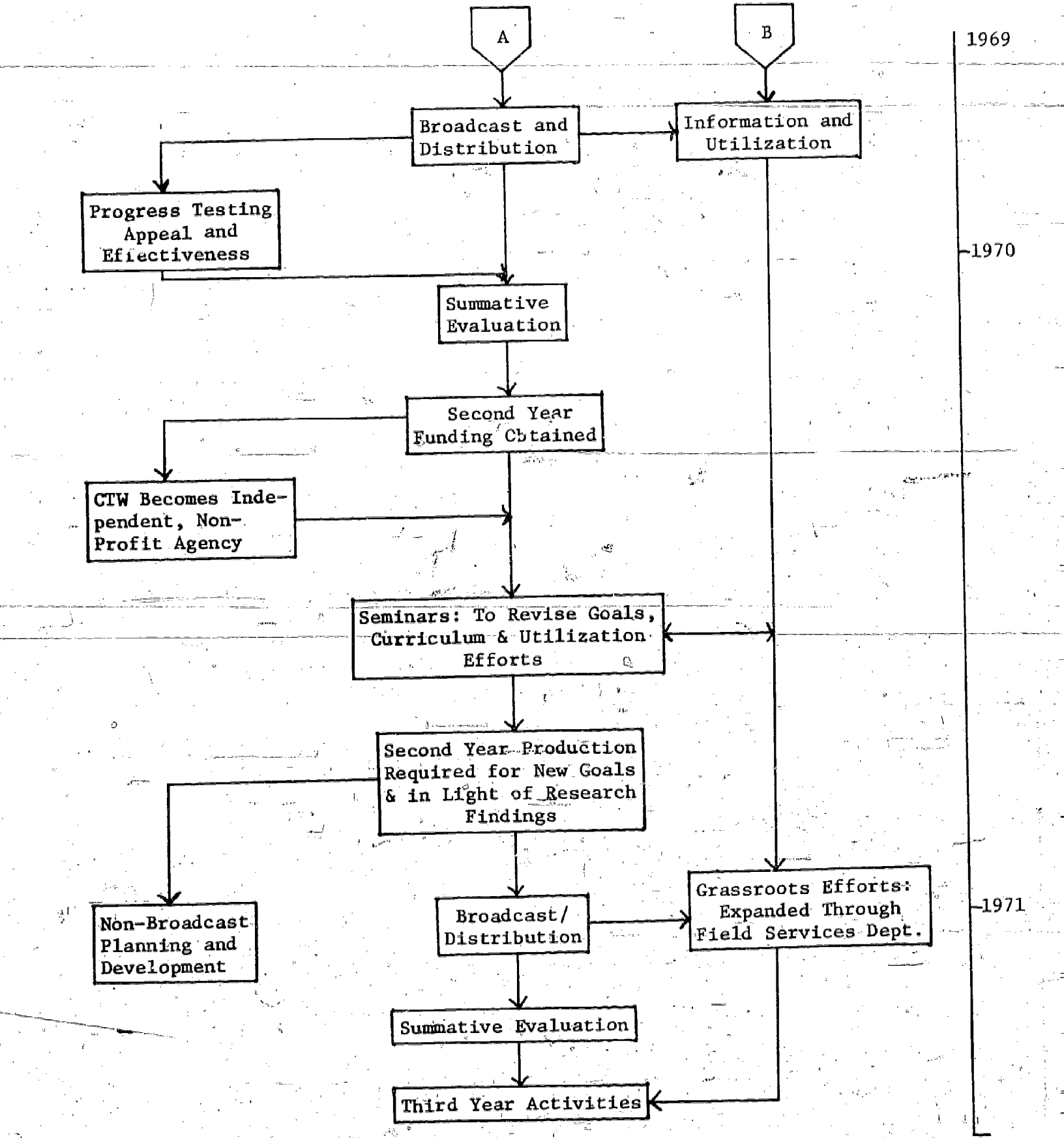
Mrs. Cooney's report, "The Potential Uses of Television in Preschool Education," was submitted to the Carnegie Corporation in November, 1966. In it, she noted that the National Education Association had recommended that all children should be given the opportunity to enter school at public expense at age four. She also pointed out that the federal government would have to spend about $3 billion or more to put all four-year-olds in regular classrooms. She concluded that for a fraction of that sum, the children could be brought together in a television "classroom without walls."

On the basis of this report, a proposal was prepared and submitted by Carnegie and funded in the spring of 1968. In this proposal they offered to create a daily, hour-long program for preschool children, to be carried nationally on educati nal and possibly some commercial stations. While the program was intended for all children, the background problems and needs of disadvantage children were to be kept uppermost in mind during the planning and promotion of all programs. The series was to be imaginatively produced and entertaining with the broad goal of fostering intellectual development.

*See Figure 2 starting on the next page for an overall view of the major events in the history of Sesame Street.

Figure 2. Major Event Flow Chart




A
B
1969
Broadcast and Distribution
Information and Utilization
Progress Testing Appeal and Effectiveness
1970
Summative Evaluation
Second Year Funding Obtained
CTW Becomes Independent, Non-Profit Agency
Seminars: To Revise Goals, Curriculum & Utilization Efforts
Second Year Production Required for New Goals & in Light of Research Findings
Non-Broadcast Planning and Development
Broadcast/ Distribution
Grassroots Efforts: Expanded Through Field Services Dept.
1971
Summative Evaluation
Third Year Activities

The program proposed was to be unique in several ways: education was to be its primary aim and entertainment the means; it was to attempt to reach a lower class as well as middle class audience; and expensive, popular production techniques were to be used to accomplish these goals. Nothing comparable to such a program existed, at the time, on television. Traditionally, children's programs that were not simply cartoons had been inexpensively produced studio shows. None of them had education as its primary goal. Captain Kangaroo and Romper Room for instance, while including some educational elements, aimed primarily to entertain. Furthermore, both these programs, and children's shows in educational television, such as Friendly Giant and Misterogers Neighborhood, seemed to appeal primarily to a middle and upper middle class audience.

To have an impact on the already extensive viewing habits of children, the program, it was felt, ought to be one hour long in length and shown once, or preferably twice, daily five days a week. Along with a production staff of experts, augmented by willing outside creative talents, the program proposed two services nearly equal in importance to the central function of production: research and evaluation to test the program materials and make sure the program was influencing and benefiting its audience, and promotion or utilization to make sure the largest possible audience would be reached.

The developers were to work within the broadcast framework of National Educational Television to create a classroom without walls, nationwide and expandable, capable of reaching into ghetto neighborhoods and remote rural areas and, it was hoped, to raise the level of education equally for preschool children everywhere. Two questions needed answering: (1) Could educational television attract a broad, general audience? And (2) could educational television produce a significant, positive impact on a young child? Thus, Sesame Street was regarded as an experiment, an experiment which the developers believed had minimum risks and great possibilities.

Funding for Product Development

The budget for an initial year of research and a second year for producing and airing 130 hours of original programming was fixed at $8 million. The $8 million initial bill was too big to be met alone by Carnegie, who submitted the proposal. Carnegie found its first enthusiastic partners in the Ford

Foundation which itself had done pioneering work in public broadcasting, and in the United States Office of Education, which agreed to meet 50 percent of the budget. Among the other principal funding sources for the first two years were the U. S. Office of Economic Development, the National Foundation on the Arts and Humanities, the John and Mary Markle Foundation, and the Corporation for Public Broadcasting.

The budget for the third year, the 1971 fiscal year, was set at $6 million plus. Heavier sums were allocated this time for the utilization function and for research for additional educational programs. In the new budget the number of programs to be produced was increased from 130 to 145 and the number of broadcast outlets increased to 200 public television stations and some 50 commercial stations which broadcast the series as a public service. Once again, the U.S. Office of Education came forward with the major financing. The other large funding sources continued: Carnegie, Ford, the Corporation for Public Broadcasting. From the business sector came some valuable special purpose grants. Quaker Oats and General Foods both offered to underwrite additional weekend and evening Sesame Street showings outside of the regularly scheduled times. Mobil Oil agreed to underwrite the publication of a high circulation Sesame Street Magazine to appear four times a year to replace the Parent/Teacher Guide of last season, a million copies of which were distributed, most of them free, each month. The printing cost for the Parent/Teacher Guide was almost exactly met by 120,000 paid subscriptions of $2.00 each.

PRODUCT DEVELOPMENT

Management and Organization

The Children's Television Workshop was created in March of 1968 as a virtually autonomous unit of National Educational Television. At that time, NET served as the distributing agency for nearly all such programming, in addition to producing the bulk of national educational programming. Some sort of affiliation was thus needed by the Workshop in order to distribute Sesame Street to broadcast stations around the country. Affiliation also offered some advantages to the Workshop by making the NET legal and financial umbrella available to it.

In the summer of 1970 a new organization, the Public Broadcasting Service (PBS), recently created by the federally funded Corporation for Public Broadcasting, assumed all distributive functions in educational television in the United States, including the distribution of Sesame Street. PBS does not itself produce programming, but provides networking service to several independent production groups. Thus, the fundamental reason for an affiliation of the Workshop with NET no longer existed. Additionally, experience indicated that the Workshop needed to maintain some legal and financial staff of its own, regardless of the NET association.

In April 1970, CTW became an independent non-profit corporation, responsible to its own board of trustees and administering its own needs. In addition to the reasons noted above, CTW broke with NET for several other reasons. CTW, mandated to reach the widest possible audience with its programming, had a real interest in placing Sesame Street on commercial television stations in areas where it could not otherwise be seen; NET practice had discouraged this regarding its own programming. The Workshop's basic contracts with television unions, talent, film producers, broadcast groups in other groups and commercial films wishing to produce materials all varied from NET standards. Generally speaking, the Workshop's needs and concerns could not adequately be met by something other than its own internally-created organizational structure. As it now stands, CTW and NET are two independent production groups which receive networking service from PBS.

The independent status of the Workshop allows it to make basic contracts with television unions, talent, film producers, broadcast groups in other countries and commercial firms wishing to produce materials appropriate for CTW programming. To carry out such negotiations, the Workshop has its own full time legal staff.

The Workshop is administered by a Board of Trustees whose chairman is Lloyd N. Morrisett, President, the John and Mary R. Markle Foundation. The Executive Committee of the Board of Trustees includes: Mr. Morrisett, Joan Ganz Cooney, President of CTW, and several other noted members of the education and television fields. The operation of the Workshop is directed by its President, Mrs. Cooney. Other officers include David D. Connell, Vice President and Executive Producer; Dr. Edward L. Palmer, Vice President and

Director of Research; Michael Dann, Vice President and Assistant to the President; Thomas P. Kennedy, Vice President for Finance and Administration, and Tresurer of the Corporation; Robert Davidson, Secretary and Director of Development; and Evelyn P. Davis, Vice President and Director of Community Relations. The divisions of non-broadcast materials is headed by Editor-in-Chief Christopher Cerf, former editor at Random House.

The Workshop relies heavily on guidance from its Board of Advisors and Research Advisory Committee, both headed by Dr. Gerald S. Lesser, Bigelow Professor of Education and Developmental Psychology at the Harvard University Graduate School of Education.

Original Development Plan

Objectives

The general aim of the children's program, as proposed, was to promote the intellectual and cultural growth of preschoolers, particularly disadvantaged preschoolers. The more specific aims of the show were to be defined by an advisory board, working in conjunction with the production staff. This board, to be selected at the outset of the project, was to represent a broad range of expertise: cognitive psychologists, teachers of disadvantaged preschoolers, a media research specialist, a child psychiatrist, a director of a neighborhood project, a preschool curriculum specialist, an outstanding film creator, and an eminent author of children's books. Some of the more specific objectives that were noted in the proposal for the program dealt with: recognition of numbers and letters; the concepts of space and time; reasoning skills; basic emotions; appreciation of arts and crafts; imagination; attentiveness; and curiosity. Thus, it was proposed that the children's program would aim not only at teaching a certain amount of specific information, but also at teaching the children how to think, not what to think. To insure that the educational aims of the program were fully integrated with the creative elements, it was proposed that an advisory board and its subcommittee would work closely with the production staff.

Description of Expected Product

The developers proposed the creation of a daily, hour long program for preschpol children, to be carried nationally on educational and possibly some

commercial stations. The program proposed was to be unique in several ways: education was to be its primary aim and entertainment the means; it was to attempt to reach a lower as well as a middle class audience; and expensive, popular production techniques were to be used to accomplish these goals. The developers also proposed to investigate various means of reaching parents with information about the children's program and with general information on child development; the eventual goal was to be the establishment of some type of parents' program, whether it be on television or via some other medium.

Believing that both the content and pace of the show needed to be lively, entertaining and varied, the developers proposed that the program during its first year be free to experiment with all kinds of format, talent and teaching techniques. A children's television "magazine," with one to fifteen minute segments in different styles (e.g., film, studio, or animation) was suggested as one possible format. The kinds of segments suggested for inclusion in the program were: story reading, animation-letters and numbers, games, new experimental films, old films used in a new way, puppets, mime and dance, at home projects, and surprises.

Planned Procedures for Product Development

The creation of a semi-autonomous production unit to be called Children's Television Workshop of National Educational Television was proposed. This unit was to be semi-autonomous to insure maximum freedom during its trial season. Its connection with NET was recommended because most stations which would carry the new program were affilicated with NET and because it would be more expedient and less expensive. A policy group composed of representatives of the major funding organizations was to be formed to review all activities of the Workshop. The proposed staff was to include: an executive director and personnel for four departments: production-producers, writers, film researchers, etc.; research and evaluation; promotion and utilization; and administration and operations.

A minimum of a year prebroadcast period to be followed by at lease 26 weeks of broadcasting was proposed. The first tasks to be started were: the organization of a summer study group to meet several times over the summer months for the purpose of establishing specific educational goals for the program; interviewing personnel; renting office space; and negotiating for use

of a technical center for production. As soon as possible in the prebroadcast period, the development of new animation, to introduce letters and numbers for example, was to be started. In addition, film researchers were to conduct an extensive search for all available visual material which would be usable. Following the summer months, the year of prebroadcast time was to be broken down as follows: four months of staffing and reviewing all existing material; three to four months of producing new segments for future shows and testing those segments as well as existing material on children; the remaining four months to produce, test and revise full-length programs. Broadcasting was planned to begin in the fall of 1969, with six weeks of programming already completed; the series then was supposed to continue to operate on a six week lead time.

NET was to handle the distribution of all programs by live interconnection and/or by videotape interconnection. The method of distribution was not certain at the time, but adequate funds were set aside for this activity.

Planned Procedures for Product Evaluation

Sesame Street was regarded as an experiment which needed careful evaluation to learn as much as possible from it. All of the psychologists and educators interviewed about the problem of evaluating the program believed that the success of the program should not be determined by the "rating game"; but by the effectiveness of the program in stimulating the children it does reach. There was also general agreement that two kinds of evaluation would be useful: (1) preproduction evaluation in order to improve the show which is finally broadcast, and (2) evaluation during and after the broadcast period to determine what has been accomplished.

It was proposed that a director of research and his staff work closely with the production people and be involved in the design of segments and entire programs. They would also work closely with a representative group of children, watching their reactions to material under consideration to see if it was interesting and understandable to them. It was also proposed that trained observers talk with children immediately after a sample program to gain some idea of what was being communicated and how effectively. A closed-circuit television system for evaluation purposes in a nursery school or day care center was also suggested.

The second type of evaluation to be contracted to an outside organization and to determine how effectively the program was teaching the children it did reach was to begin as soon as the show was on the air. This staff was to design studies to determine as accurately as possible how well the program was accomplishing its goals. Several variables were suggested for examination. While it was felt that specific evaluation designs could not be worked out in advance, pre- and posttesting of several populations of children were proposed.

Actual Procedures for Development

Development

A budget of $8 million allowed for approximately 18 months of research and development, overlapping by about six months a production and broadcast phase of approximately 12 months. The first major activity was to bring together experts in various curricular areas appropriate to the education of preschool children. Five 3-day seminars were held in the summer of 1968; the topics covered were Social, Moral and Affective Development, Language Development, Numbers and Mathematical Skills, Reasoning and Problem Solving, and Perception. Each seminar group was asked to suggest educational goals for the Workshop's program series and to discuss ways of realizing the goals on television. The deliberations of the seminar participants and the recommendations of the CTW Board of Advisors were reviewed in a series of staff meetings from which a list of instructional goals for the program emerged. These goals were grouped under the following major headings: symbolic representation; reasoning and problem solving; and the child and his world. Specific goals under each of these broad headings were then stated, insofar as possible, in behavioral terms, so that they might serve as a common reference for the program producers and the designers of the achievement tests. Thus, the likelihood of appropriate coordination of production and evaluation was increased.

While the statement of goals specified the behavioral outcomes the program hoped to achieve, it was necessary to ascertain the existing range of competence in the chosen goal areas among the target audience. The workshop research staff therefore undertook a compilation of data provided in the literature, as well as some testing of its own, to determine the competence range. The resulting information was used to help guide the producers in

allocating program time and budget among the goal categories and in selecting specific learning instances in each goal area.

The preference of the target audience for existing television and film materials was an essential consideration in the design of the new series. In response to this concern, an experimental method was devised to measure a child's interest in a given piece of material by continuously recording his visual orientation toward or away from the television screen during the presentation. While this procedure gave no reliable indication of absolute interest in the material tested, it did result in an index of the relative appeal of a broad range of entertainment and instructional films and television programs. Furthermore, graphing the fluctuations in audience interest in a particular program permitted the researchers and producers to analyze the program from moment to moment to discover those elements which were most compelling of attention and those which failed to hold the interest of the sample audience. Research confirmed the appetite of the audience for fast pace and variety.

Seminar participants and CTW advisors had urged using a variety of production styles to achieve the curriculum goals. On the basis of this recommendation and the research findings suggesting which of these appealed to the target audience, the CTW production staff invited a number of live-action and animation film production companies to submit ideas. Sesame Street eventually included the work of 32 different film companies. Prototype units of all film series produced by or for the Workshop were subjected to rigorous preliminary scrutiny and empirical field evaluation. Scripts and storyboards were revised by the Workshop producers on the basis of recommendations from the research staff; further revisions were made after review by educational consultants and advisors; and finished films were tested by the research department with sample audiences. Some materials never survived the process. Sample videotaped material went through the same process of evaluation, revision and occasional elimination.

The assignment for a day's show was given to one writer. The objectives for the curriculum for the day's show and the live animations that were to be used were specified for the writer on an assignment sheet. A writer's notebook/manual, which included examples of how goals might be expressed in terms of children's behavior, served as a resource for ideas for the writer. Given the objectives, the materials to be used, and the writers' notebook, the writer was required to write 20 minutes of original script for the hour show.

By July of 1969, a format for the entire show had been devised, a title had been selected, a cast had been tentatively assigned, and a week of full-length trial programs were taped as a dry run and for testing purposes.

Formative Evaluation

Completed prototype production elements were tested by the research staff in two ways: (1) appeal for the CTW material was measured against the appeal of previously tested films and television shows, and (2) the CTW material was tested for its educative impact under a number of conditions. For instance, field studies were conducted to determine the effect of various schedules of repetition and spacing, of providing the child with preliminary or follow-up explanation, of presenting different approaches to a given goal separately or in combination, and of the relative effectiveness of adult vs. child voice-over narration. Extensive observation of viewing children provided information regarding the child's understanding of various conventions of film and television technique. Upon conclusion of each research study, the results were reported to the producers for their use in modifying the show components tested and for guidance in the production of subsequent elements.

A test showing of five programs was assembled in July 1969. The programs were broadcast on a UHF station in Philadelphia and shown on closed-circuit to a New York day-care audience. A test battery, developed by the Educational Testing Service which was under contract with the Workshop to conduct the summative evaluation of the initial broadcast season, was administered to sample groups both in Philadelphia and in New York. Results from this testing and from appeal testing of the same five shows suggested final prebroadcast revisions of the first shows. This test showing also provided an opportunity to try out the test instruments themselves and to determine which refinements were necessary.

The formative evaluation of Sesame Street did not end with the first national broadcast on November 10, 1969. Formative research studies conducted throughout the 6-month broadcast period continued to guide the development of new production techniques, format elements, and teaching strategies. As before, these studies had two foci: the holding power of entertainment techniques and the effectiveness of educational content. Earlier and continuing studies of

individual program segments, while useful, were necessarily limited in scope. With the onset of the broadcast season, it was now possible to examine the impact of continuous viewing of entire shows over a period of time. Thus, the research staff instituted a program of progress testing of the show's effectiveness. Using the ETS instruments, a sample of day-care children, predominantly four- and five-year-olds, was pretested prior to the first national telecast of Sesame Street. One-third were tested again after three weeks of viewing the show, the first third and a second third were tested after six weeks of viewing, and the entire group was tested after three months of viewing. Comparisons between experimental (viewing) groups and control (non-viewing) groups at each stage of the testing gave indications of strengths and weaknesses both in the execution of the curriculum and in the production design. Appeal measurement and informal observation of viewing children also influenced production decisions during this period.

The Second Season of Sesame Street

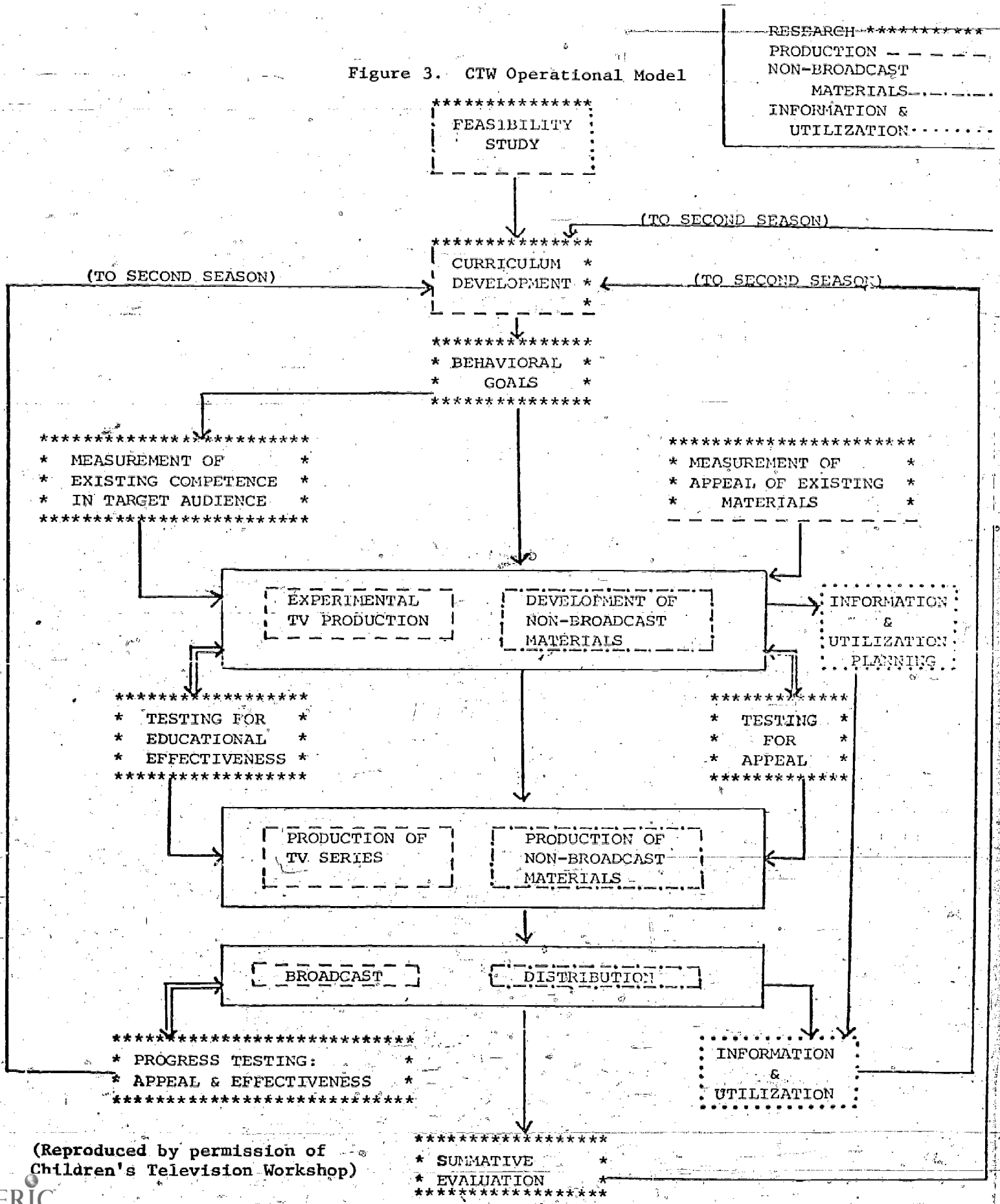
The second season of Sesame Street was built on the experiences of the first season in several ways; the instructional goals of the program were extended and refined; the research design of the Workshop was modified to take account of the new instructional goals and new opportunities resulting from two consecutive broadcast seasons; and the utilization activities of the Workshop were expanded to insure that Sesame Street reached, to the maximum degree possible, its target audience of disadvantaged preschool children, especially in the large cities. Seminars were held in the spring and summer of 1970 to refine and add to the instructional goals of the first season. Production techniques developed for the first season were reviewed in terms of their effectiveness and new methods of handling the material on television were devised. In all of the new and revised goal areas formative research and evaluation were involved, as required, in the prebroadcast of the new experimental production approaches. Pilot program sequences were evaluated in the field by the research staff before final decisions were made regarding use of the new material in the fall programs. This followed the same pattern employed in creating and evaluating materials prior to the beginning of the first season of the series.

In the first experimental season, nearly a year-and-a-half was available

for research activities feeding directly into production decisions. These included primarily research on attention and on learning. The time for pre-broadcast research in preparation for the second season was a great deal shorter and the range and number of field research activities were limited. Consequently, the formative and summative research findings of the first season served as the major source of information upon which to base production decisions in preparation for the second season. However, prebroadcast research did include investigation of the performance range of target children in the new goal areas and testing, as required, of pilot productions in these new areas. A program of periodic achievement testing prior to and at regular intervals during the actual broadcast season was also conducted.

On the following page in Figure 3 is a diagram of the CTW Operational Model. Development, Evaluation and Dissemination activities are included in this model.

Figure 3. CTW Operational Model



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Evaluation Staff

The summative research and evaluation for the first year of Sesame Street was carried out by Educational Testing Service (ETS). ETS is also conducting the summative evaluation for the second year of Sesame Street; however, the results of this second year evaluation are not yet available and, hence, discussion will focus only on the first year evaluation. In both cases, ETS representatives have participated in all main phases of prebroadcast planning, thus providing coordination between program development and follow-up testing.

The ETS professional staff, including the data processing personnel, numbered about 12. In addition to the ETS staff, the following people helped to conduct or coordinate the summative evaluation: the CTW advisory board, the CTW research division, the local field coordinators and teachers and administrators in the viewing areas.

Field Test

Designer of Field Test

The summative research and evaluation carried out by ETS followed a plan developed in consultation with CTW staff and advisors.

Funding

The Children's Television Workshop sub-contracted the summative evaluation to ETS. Thus, funds for the summative evaluation came from the principal funding sources supporting CTW: the U.S. Office of Education, Carnegie, Ford, and the Corporation for Public Broadcasting.

Coordinator of Field Test

Dr. Samuel Ball, a Research Psychologist at ETS, was the principal investigator.

Major Questions Examined

The following were the major questions the research tried to answer:

1. What, overall, was the impact of Sesame Street?
2. What were the moderating effects of age, sex, prior achievement level, and socioeconomic status on the impact of Sesame Street?

3. Do children at home watching Sesame Street benefit in comparison with children at home who do not watch it?
4. Do children in preschool classrooms benefit from watching Sesame Street as part of their school curriculum?
5. Do children from Spanish-speaking homes benefit from Sesame Street?
6. What are the effects of home background conditions on the impact of Sesame Street?

Subjects

Approximately 1200 children were originally selected from the following five locales: Boston, Massachusetts; Durham, North Carolina; Philadelphia, Pennsylvania; Phoenix, Arizona; and a rural area in the Northeastern part of California. The sample, which finally numbered 943, included disadvantaged children from the inner city, advantaged children from suburban areas, children from rural areas, and disadvantaged Spanish-speaking children. Overall, the research sample included more boys than girls and more lower class than middle class children. More of the disadvantaged were black than white; most of the children were four years old, although some were three and some were five; and more of the sample's children viewed Sesame Street at home than at school.

Sampling in Boston, Durham and Phoenix was conducted in areas of greatest poverty and in neighborhoods around Head Start Centers. The Philadelphia group was primarily suburban and middle-class, and the California group was mainly rural and disadvantaged. The sampling and testing was conducted by local people, usually residents of the target areas. They were recruited by the local coordinators and trained in the sampling and training procedures by ETS staff. They were subsequently supervised by local coordinators who were in frequent communication with the ETS project staff in Princeton.

Treatments

It was initially decided that the effects of viewing the show in two major settings would be studied. The first setting was the child in his own home. That was where the greatest evaluation effort was made, because this was the child in greatest need of preschool education. The second setting was the child in a preschool classroom--for example, Head Start or nursery school. Children in both settings were either encouraged or not encouraged to observe Sesame Street. The major groupings of children across treatments appear in Table 1, below.

Table 1

Major Groupings used in the evaluational study of Sesame Street. Males and females are represented in each group.

	3 years old, low SES	(encouraged, observed) (not encouraged, not observed)	
At home	4 years old, low & middle SES, including rural children	(encouraged, observed) (encouraged, not observed) (not encouraged, not observed)	Spanish-speaking English-speaking Spanish-speaking English-speaking
	5 years old, low SES	(encouraged, observed) (not encouraged, not observed)	
	3 years old, low SES	(encouraged, observed) (not encouraged, not observed)	
At preschool	4 years old, low & middle SES	(encouraged, observed) (encouraged, not observed) (not encouraged, not observed)	Spanish-speaking English-speaking Spanish-speaking English-speaking
	5 years old, low SES	(encouraged, observed) (not encouraged, not observed)	

A descriptive categorization of the children appears in Table 2.

A descriptive categorization of the children appears in Table 2.

Table 2

Descriptive Categorization of the Children

	Total N=943	Boston N=319	Philadelphia N=169	Durham N=186	Phoenix N=206	California N=63
	%	%	%	%	%	%
Sex:						
Male	51.6	50.2	52.1	52.7	54.4	46.0
Female	48.4	49.8	47.9	47.3	45.6	54.0
Location:						
At home	55.0	38.6	61.0	74.7	44.7	98.4
In school	45.0	61.4	39.1	25.3	55.3	1.6
Predominant Language spoken in home:						
English	94.5	97.8	100.0	98.4	80.6	96.8
Spanish	4.6	1.3	0	0	18.0	3.2
Viewing Status:						
Encouraged	63.1	53.9	68.6	74.7	60.7	68.3
Not encouraged	36.1	43.6	31.4	25.3	39.3	31.8
Observation Status:						
Observed	48.1	51.7	53.9	52.7	48.5	0
Not observed	51.9	48.3	46.2	47.3	51.5	100.0
Observation Status of the 62.5% who were Encouraged:						
Observed in school	22.8	30.1	23.7	15.1	24.8	0
Observed in homes	24.1	17.9	30.2	37.6	23.8	0
Not observed in school	0.6	1.6	0	0	.5	0
Not observed in homes	15.6	4.4	14.8	22.0	11.7	68.3
Population Group:						
Black	50.4	60.5	2.4	87.1	56.8	0
Spanish	6.8	1.9	0	0	26.7	4.8
White	42.3	37.6	97.0	12.9	16.5	90.5
Age in months:						
34-45	15	28	9	14	5	5
46-57	66	43	85	61	85	77
58-69	19	29	6	25	10	18

Measures

All but one of a variety of measuring instruments used in the evaluation were developed specifically for the study. The test battery included nine separate tests at pretest time, and was revised and expanded to include 11 tests for the posttest. The tests were designed for individual administration by a trained adult and were administered in the child's home or school, usually in three separate sessions, each about 40 minutes long. All of the tests followed the same basic format which was designed to minimize the need for verbalization by the child. The test materials were simple and were designed to measure the major educational goals of Sesame Street as well as transfer of learning effects. The Peabody Picture Vocabulary Test was the one instrument used in the study which was not specifically designed for it.

A Parent Questionnaire was devised for the purpose of learning something about the home backgrounds of the children in the study. Various aspects of family life, home climate, parental aspirations, TV viewing habits, and SES were included on this questionnaire which parents were paid to fill out both at pretest and posttest time. The posttest included questions about the child's TV viewing habits in general and about his Sesame Street viewing habits, in particular.

For all children encouraged to watch Sesame Street at home or at school, mothers or teachers filled out daily reports on how much their children actually watched the show. In addition, mothers were asked once a month to indicate on a TV guide the shows their children had watched on the previous day. Thus, the Posttest Parent Questionnaire, the posttesting of the children, the daily reports by parents and the TV guide responses provided four measures which were combined to give a total viewing index.

Children in the at-home encouraged group and those in the in-school encouraged group were periodically observed watching the show by ETS observers. The observers noted the children's visual, verbal, and motor responses to selected segments of the show and to selected characters and techniques of presentation. An interview was developed to find out whether, and how, mothers of at-home children used the Sesame Street Parent-Teacher Guide, and a questionnaire was given to teachers whose classrooms were encouraged to view in order to learn how the show was used in each classroom.

Results

As the data were collected throughout the year, they were checked by the local coordinator, mailed at regular intervals to the ETS Princeton office, rechecked, keypunched and prepared for analysis. Analytical procedures had been devised by the project director in consultation with ETS experts in statistical analysis and computer operations.

When all of the data had been collected and analyzed, there were 943 children for whom complete pretest and posttest data were available. The total group was then divided into quartiles according to how much the children watch Sesame Street during the six month season. All subsequent analyses were performed using the total group or subgroups of these children divided into the viewing quartiles.

Descriptive, probing and inferential analyses were performed. The descriptive analyses were performed on pretest, posttest and questionnaire data of various groupings of the 943 children to find out the effects of Sesame Street on each group of children. The following groups were described separately: all 943 children; disadvantaged children; 3-, 4-, and 5-year-old children; boys and girls; at-home children; at-school children. Two sets of probing analyses were performed: An Age Cohorts Study attempted to disentangle the effects of viewing from previous achievement, IQ, and home background among the children; the second analysis was designed to investigate the question of what differentiates the children who learned most from those who learned least. To learn whether the differences found could have occurred by chance, the data collected were finally subjected to statistical treatments. The statistical technique used was MANOVA (multivariate analysis of variance). Simple gain scores, either on the total test or on subtests, were used throughout.

The results can best be summarized by answering the questions that were the focus of the evaluation.

1. What, overall, was the impact of Sesame Street?

   Answer: The impact in most goal areas was both educationally and statistically significant. Transfer of learning was noted in some instances, but basically the large gains occurred in those areas that were directly taught. There was no evidence of side effects during the six months of the show.

2. What were the moderating effects of age, sex, former achievement and SES on the impact of Sesame Street?

   Answer: Generally, younger children gained more than older children. Differences between gains of girls and boys were not educationally significant. Prior educational achievement was confounded with amount of viewing; one could not tell what would happen if the initial levels of attainment were systematically varied. SES was also closely allied to prior achievement levels.

3. Did children at home watching Sesame Street benefit in comparison with children at home who did not watch?

   Answer: High viewers far surpassed low viewers. Adjunct professional helpers were not required in order for the viewing child to benefit.

4. Did children in preschool classrooms benefit from watching Sesame Street as part of their school curriculum?

   Answer: At school, amount of viewing was clearly related to amount of gain.

5. Did children from Spanish-speaking homes benefit from Sesame Street?

   Answer: High viewing Spanish-speaking children from a disadvantaged community and with low SES indices gained more than any other group, surpassing at posttest even the high-viewing advantaged children. With a sample of 45 children these results should be viewed cautiously.

6. What were the effects of home background conditions on the impact of Sesame Street?

   Answer: No systematic differences in home backgrounds were noticeable.

Modifications Made in Product

The first season summative research was evaluated and implications of the results were fed back into the development of the second season. The content analysis of Sesame Street and the observations of children watching Sesame Street, both performed by ETS, provided valuable information which was used to modify and add to the first season shows. The content analyses provided a description of the actual output of the show that was independent of the

intentions of the CTW staff. These analyses revealed which CTW goal areas received most attention and which techniques were used to present which goals. Observation data indicated children's visual, verbal and motor reactions to selected segments of Sesame Street. Both types of findings suggested modifications in the goal area to be covered and the production technique to be utilized for the second season of the show. As noted earlier, both types of changes were made in the second season of Sesame Street.

Other Evaluations

In the write up of a study being conducted, Herbert A. Springle, Director of the Learning to Learn School in Jacksonville, Florida, questioned whether poverty children could live on Sesame Street and pointed to the risks involved "in attempting to solve complex problems with simple solutions." In his study published in the March 1971 issue of Young Children, Springle concluded: "the gap between the disadvantaged and advantaged children increased as the result of Sesame Street."

His study included an experiment with 24 pairs of randomly selected disadvantaged kindergarten children matched on the basis of Binet IQ score, age, and similarity of background. The experimental group watched Sesame Street in two Head Start kindergarten classes and followed up with activities suggested in Sesame Street materials. A control group of disadvantaged children was not exposed to Sesame Street. Instead, the children attended another school program for the same length of time. For 15-30 minutes each day the group was exposed to numbers, relationships, communication and listening experiences. These lessons were taught in a game format to four children at a time. While cognitive development was important, emphasis was placed on the children's emotional and social development. At the beginning of the fourth week in first grade, the children of both groups were given the Metropolitan Readiness Test, chosen because it measured those skills focused on in Sesame Street and because it measured how well prepared the child was to undertake the work of the first grade. Both groups, at this time, were also given a box of crayons and paper and asked to draw a boy or a girl just like themselves; this test was to measure the child's awareness of himself.

On all six measures and on the total score of the Metropolitan Achievement Test the control group scored significantly higher than the Sesame Street

graduates; the t-test was the statistical procedure employed. The average number of body parts drawn by the control students was double the number drawn by the Sesame Street graduates; the control students were more aware of themselves.

While Sprigle obviously had an axe to grind and while his study only involved 48 students, the jist of his measage should be considered carefully. He emphasized the child's emotional and social development and pointed out that the biggest handicap facing the disadvantaged child is his detachment from close human relationships. Obviously, such a relationship can take place only with people and not with a television screen. At the same time, the objectives of Sesame Street must be considered; its developers do not claim the program will help children develop close human relationships. According to the ETS evaluation, Sesame Street is meeting the objectives for which it was intended.

DIFFUSION

Agency Participation

Within CTW is the recently created Community Relations Division which is concerned with involving national groups, including civic, government, and private organizations in community based efforts. The Field Services Department is part of this new division and has as its main thrust community involvement in Sesame Street. Besides CTW's self-directed diffusion activities are the activities of Carl Byoir and Associates which were contracted by CTW for the first two seasons of Sesame Street to supervise the information/promotion/utilization activities of the show. As noted earlier, National Educational Television distributed the first year of Sesame Street and the Corporation for Public Broadcasting distributed the second year and is distributing the third year of the show.

Diffusion Strategy

To reach and interest its target population, CTW developers planned very early to use the program: at home; in classrooms, e.g., Head Start classes; in existing groups, e.g., day care centers; and in newly created groups, e.g. neighborhood viewing groups. They also planned significant promotion activities. Free publicity was anticipated from large-circulation newspapers

and magazines and from local libraries, church and civic groups. It was felt that the free publicity would spread word of the program to middle class audiences, enabling the bulk of the promotion money to be aimed at the disadvantaged child and his mother. To reach this latter group, the following methods were planned: free mailings; sound trucks that would visit target areas; advertisements in local newspapers; promotion through Head Start teachers, day care centers, and nursery schools; spot announcements on radio and television; and house-to-house canvassing.

The developers proposed picking two target cities the first year and doing intensive promotion and special utilization of the program in underprivileged areas of those cities. During the second year utilization was planned in many major metropolitan areas and promotional activities were to be modified and added to on the basis of the results of the first year's activities.

Actual Diffusion Efforts

The first diffusion efforts were aimed at securing optimum time slots for the program in the schedules of the affiliated stations of N.E.T. which handled the distribution of the first year of Sesame Street. To secure clearance of this optimum time, which was between nine and eleven in the morning and which was the time many N.E.T. affiliates had income-producing in-class programming, required many cross-country persuasion visits by Mrs. Cooney and Mr. Davidson to the offices of school superintendents and local station managers.

Once the time slots were secured, efforts were directed to making the inner-city household aware of the coming Sesame Street. Various promotional compaigns were conducted, including the use of cruising sound trucks, broadsides and leaflets, school posters, spot announcements on radio and television, and house-to-house canvassing.

The attention paid to the Workshop's activities in the press and other media grew very rapidly. Commercial television even took the unprecedented step of providing program and promotional time to help CTW launch the series. Support from the print media--newspaper, wire services and magazines--was very encouraging to the developers.

Experimenting in ways and means of reaching poverty areas to persuade residents to tune in their local public television station was a continual

activity. The most important supportive material produced by the Workshop in the first season was the "Parent/Teacher Guide to Sesame Street," a monthly publication which listed major content items for each program and suggested follow-up activities which could build a program content and extend its educational effectiveness. A million copies of the Guide were printed each month, with 80 percent of the copies being distributed free to inner-city audiences through a variety of distribution points ranging from welfare offices to churches to neighborhood grocery stores.

The utilization campaigns were most successful in the cities where either black or Spanish-speaking utilization directors or staff were hired, and where well-conceived and executed programs of informing and motivating inner-city residents were undertaken.

Based on observation and experience during the first season, there remained an urgent need for concerted utilization activity. This was especially emphasized during an evaluation conference, held in the summer of 1970, to analyze the effects of the first season's utilization efforts. Participants were those who had been most involved in Sesame Street utilization programs across the country and representatives of the Workshop's funding organizations. Successes and failures of various techniques and suggested project methods for adoption in the second season were discussed. Following this, a comprehensive master plan for utilization in many major metropolitan areas was drawn up.

Utilization efforts with neighborhood and community groups, the local educational establishments and government agencies ranging from libraries and welfare offices to city hall increased tremendously during the second season. Home viewing groups were set up; a distribution network for the Sesame Street Magazine which replaced the Parent/Teacher Guide was developed, and Sesame Street was integrated into the overall curriculum in many Head Start and day care centers.

A National Utilization Director was appointed and made responsible for the selection, training and monitoring and admistering of local directors who in turn trained volunteers. In the spring of 1971, the utilization department became known as the Field Services Department which was part of the just created Community Relations Division, directed by Evelyn P. Davis, CTW vice president. Charles Smith was named director of Field Services. By this time there were 35 field coordinators assigned to 14 metropolitan

areas and a dozen headquarter staff members. Training programs for volunteers were operating in all 14 areas and the grassroots efforts were beginning to have a significant impact.

In the summer of 1971, under a unique national tutoring program announced jointly by the Department of Labor and CTW about 1500 Neighborhood Youth Corps enrollees conducted follow-up education activities for pre-schoolers based on Sesame Street programs. About 600,000 dollars were allocated to implement the program during July and August in 14 metropolitan areas across the country. The high school students were paid an average of $40 a week during the eight week program, which was estimated to reach more than 17,000 preschoolers. The teenagers, recruited by the Labor Department and trained by volunteers prepared by CTW, used a curriculum developed by the workshop. The curriculum consisted of play-type activities geared to preparing preschoolers for elementary school. CTW provided training materials and program information and, in conjunction with the Manpower Administration, monitored and evaluated the project. According to Mrs. Davis, the pilot project was designed not only to develop the skills of Neighborhood Youth Corps summer workers but also to raise their sights. Their participation in a teaching situation was geared to help them gain a fresh new viewpoint regarding education.

Product Characteristics and Diffusion

While there may be a shortage of schoolrooms, there is no shortage of television sets. More families have television sets than have bathtubs; even in households with less than $5,000 income 90 percent own a television set. The fact that Sesame Street is a product which reaches its target audience through this ominipresent medium makes its impact potential relatively high. Yet, as noted above, diffusion efforts require more than simply getting the program on the air. Its target audience must watch it.

Since each show stands alone, the students and teachers can integrate the daily programs into their schedules when feasible. While parent or teacher training is not necessary, such training is available and recommended especially for leaders at viewing centers. The program is very compatible with other preschool practices and can easily be integrated into typical Head Start or day care center programs.

The target audience has very little impact on whether Sesame Street should be supported by the Federal Government and other agencies. It can only chose to watch or not to watch the program; this costs them very little effort and money. Consequently, the economic conditions of the time, high inflation and high unemployment probably have very little adverse affect on how many children the show reaches.

ADOPTION

Extent of Product Use

Sesame Street is being used by public schools, Head Start Centers, nursery schools and viewing centers all over the United States. Developers have estimated that they are now reaching 90-95 percent of Sesame Street's potential audience in the United States. In addition, by the end of 1970, 26 foreign countries were viewing the first year's programs, and more and more foreign countries are adapting, with CTW consultation, the programs to their local cultures.

Installation Procedures

No unusual physical arrangements or classroom organization are necessary to view Sesame Street. In fact, all that is absolutely necessary is a working television set and a place to view it. However, guidance provided by teachers, parents, or community volunteers has been found to facilitate the impact of the show, in terms of student viewing habits and achievement. In particular, the grassroots efforts discussed earlier have emphasized the importance of teacher, parent, and community involvement. In-service orientation workshops and training workshops have provided a means through which support personnel can learn to reinforce the show's educational goals. While the show itself cannot be modified, how it is used is up to the support personnel; it can be the primary resource or only a supplementary resource for teaching children. While no administrative support beyond the school system is needed, adoption of Sesame Street has been partly dependent upon the public relations efforts prior to adoption. Again, the grassroots efforts have proven critical.

FUTURE OF PRODUCT

Sesame Street became television's most honored show in its very first season. Some of the awards presented to the series, its producer (CTW), or its sponsors were: 3 Emmey Awards, the Prix Jeunesse International Award, the George Foster Peabody Broadcasting Award, the Christopher Award, the Fifth Annual Critic's Consensus Citation, the Director's Award, the Saturday Review Award, the John Russwurm Award, the Florida School Bill Award, the Television Today Award of Achievement, the TV Scout Awards Show of the Year, the Silver Anvil Award, the Clio Award, the Pearl Merrill Memorial Award, the Laure Waterman Wise Award. In addition, the U.S. Commissioner of Education, Sidney P. Marland, told a Senate appropriations committee that Sesame Street is the best research investment made by the U.S. Office of Education.

The success of Sesame Street has led to a host of new opportunities and possibilities not only for CTW, but for others as well. CTW has extended its experiment to books, records, and instructional playthings in order to compound the educational impact of its preschool series. Of special significance is CTW's new project for teaching reading skills to children between the ages of 7 and 10. This program, the "Electric Company," promises to be a valuable tool to aid in classroom instruction.

Two major problems may hinder the future of Sesame Street and programs similar to it. One involves money. The other involves people. First, the developers believe that the source of funding cannot continue as it has. Critics within and outside the present funding sources have implied this. Cable television may prove helpful in this regard; CTW has already begun an examination of the feasibility of its using cable television for its educational programs. And second, the creative people needed to produce such shows and to train support personnel to work with the children who view the show are hard to find. Talent in educational television is rare.

A major criticism of Sesame Street has been its lack of focus on emotional development established in effective human interactions; however, the developers pointed out that this lack of focus derives primarily from the nature of television, not from a lack of interest on their part. The student viewer of Sesame Street cannot interact with the television screen, but he can interact with the support personnel. Thus far, training of support personnel has not

focused on human relations training. Again, effective programs and people in this area are hard to find.

In summary, the availability of funding for future development, the availability of talent to produce the educational programs, and the availability of trained support personnel to relate effectively with the student viewers will have a lot to do with the future of Sesame Street and similar programs.

CRITICAL DECISIONS

The following events are a good approximation of crucial decisions made in the three-year developmental history of Sesame Street. For each decision point, the following types of information were described: the decision that had to be made, the alternatives available, the alternative chosen, the forces leading up to choosing a particular alternative, and the consequences resulting from choosing an alternative.

Although an attempt has been made to present the critical decisions or turning points in chronological order, it must be clearly pointed out that these decisions were not usually made at one point in time, nor did they necessarily lead to the next decision presented in the sequence. Many of the critical decisions led to consequences that affected all subsequent decision making processes in some important way.

Decision 1: To Do a Feasibility Study

Research had shown that the academic achievement gap between disadvantaged and middle class children shows up very early in the school years and increases dramatically in the higher grades. Furthermore, there was a growing belief that the learning process should be started earlier for all children and that educators could no longer ignore the first five years of a child's development. During the dinner party at Mrs. Cooney's home in 1966, it was recognized that there was a need for preschool education, that the alternatives presently proposed or available were very expensive, and that the time was fertile for the germination of new creative ideas employing modern media. The medium, i.e., television, was there; it was only the message which needed changing. Mrs. Cooney's feasibility study, summarized in "The Potencial Uses of Television in Preschool Education," was the first critical breakthrough in the struggle to change the message of television. This report spelled out the untapped

potential of television in meeting the present crises in education concerning disadvantaged child. It was the first step towards obtaining substantial funds to tap the potential of television.

Decision 2: To Go For Broke

The feasibility study showed that tapping the potential of television so it would make a lasting impact on the lives of children was a huge task and one that would require extensive financial support. Funds for a smaller effort could have been obtained more easily--a less ambitious view would have demanded less on all fronts. The originators of Sesame Street decided to go for broke--either they would obtain the necessary funds to go all out, or they would drop the idea. By pushing for the extensive effort, they laid the ground rules not only for the quality of the program to be produced but also for subsequent efforts. This meant that quality in personnel, in the program which came to focus on both instruction and entertainment, and in overall development procedures could always be demanded.

Decision 3: To Carefully Select Key Personnel

Once the feasibility study had pointed out the need for an extensive effort and the decision was made to go for broke, the focus turned to the careful selection of key personnel who would determine the direction of the effort. It was quite apparent to the developers of the proposal and to the funding agencies that the director, the producer, and the link to the educational world would have a lasting influence on the quality, the scope, and the overall impact of the effort. Thus, the emphasis was initially placed on people rather than on programs or organizations.

Decision 4: To Make CTW Virtually Autonomous

CTW was created in March of 1968 as a virtually autonomous unit of NET. NET was producing the bulk of national educational programming at that time and was also serving as the distributing agency for nearly all such programming. The Workshop needed some sort of an affiliation in order to distribute Sesame Street to broadcast stations around the country. In making NET its administrative home, the Workshop also had available the NET legal and financial umbrella. Because of the autonomy obtained at the very beginning, CTW was able to direct most of its activities, and was eventually able to break with NET and become an independent non-profit corporation. Thus, the freedom for growth was always present.

Decision 5: To Include a Research Effort

While the decision to include a research team in CTW was made tentatively and cautiously, the decision was made rather early. It was felt that some link to the educational world and some type of formative/summative evaluation would be required to give the program authenticity, especially with respect to student achievement. Had the decision been made to ignore research, the outcome of the show might have been quite different. In particular, the systematic approach designed and employed probably would not have been considered and the quality of the show would not have been improved on the basis of systematic feedback from all sources.

Decision 6: To Insist on a Division of Labor

While coordination of activities was critical, tasks were seen as belonging to specific teams, i.e., the production group, the research group, the utilization group, and the administrative group. For example, the producers were not allowed to do research and the researchers were not allowed to produce. However, lines of communication were kept open, so that each team could understand what the other teams were trying to accomplish and could offer suggestions. This approach assured that the tasks were accomplished by the most capable personnel and that they were completed according to schedule.

Decision 7: To Design and Employ a Systematic Approach

As the development progressed, it became apparent that what was evolving was an operational model. The decision was then made to make this model systematic, so that feedback from all valuable sources would be assured throughout the history of the product. This decision helped to put into focus all the variables involved in tapping the potential of television, e.g., its audience, its message, its effectiveness, its appeal and its general impact. The systematic operational model set the tone, not only for the development of Sesame Street, but also for the subsequent development of other CTW efforts.

Decision 8: To Include a Pre-Broadcast Tryout of Test Shows

Given the systematic operational model, it was natural to test a series of shows before the broadcast season started. However, not everyone realized the importance of this prebroadcast tryout until after it was completed. The tryout forced the producers and researchers to make decisions early

enough that modifications could be made before the broadcast season started. It also gave them a feeling for which techniques were most effective and which segments were most appealing. In addition, it assured that the feedback from the most important source, i.e., the child viewing the show, would have a significant impact on the development of the show.

Decision 9: To Carefully Lay the Groundwork for Future Efforts

The greatest lasting influence of Sesame Street may well prove to be its effect on the development of television generally as a service to the public. This has been an implicit, if not explicit, long range goal of Sesame Street in particular and the Workshop in general. By choosing to lay the groundwork for future efforts while working on Sesame Street, CTW has acquired a host of new responsibilities and opportunities. The potential uses of television in all aspects of education now seems enormous. This awareness was largely the result of seeing beyond Sesame Street to many systematic programs using modern media to educate.

REFERENCES

Ball, Samuel, & Bogatz, Gerry Ann. The First Year of Sesame Street: An Evaluation. Educational Testing Service, Princeton, New Jersey. October, 1970

Sprigle, Herbert A. An evaluation of Sesame Street Young Children, March, 1971.

APPENDIX A

LIST OF PRODUCTS AND DEVELOPERS

The following is a list of products for which Product Development Reports have been prepared.

Arithmetic Proficiency Training Program (APTP)
Developer: Science Research Associates, Inc.

The Creative Learning Group Drug Education Program
Developer: The Creative Learning Group
Cambridge, Massachusetts

The Cluster Concept Program
Developer: The University of Maryland,
Industrial Education Department

Developmental Economic Education Program (DEEP)
Developer: Joint Council on Economic Education

Distar Instructional System
Developer: Siegfried Engelmann & Associates

Facilitating Inquiry in the Classroom
Developer: Northwest Regional Educational Laboratory

First Year Communication Skills Program
Developer: Southwest Regional Laboratory for
Educational Research & Development

The Frostig Program for Perceptual-Motor Development
Developer: The Marianne Frostig Center of Educational Therapy

Hawaii English Program
Developer: The Hawaii State Department of Education
and The University of Hawaii

Holt Social Studies Curriculum
Developer: Carnegie Social Studies Curriculum Development Center,
Carnegie-Mellon University

Individually Prescribed Instruction--Mathematics (IPI--Math)
Developer: Learning Research and Development Center,
University of Pittsburgh

Intermediate Science Curriculum Study
Developer: The Florida State University,
Intermediate Science Curriculum Study Project

MATCH--Materials and Activities for Teachers and Children
Developer: The Children's Museum
Boston, Massachusetts

Program for Learning in Accordance With Needs (PLAN)
Developer: American Institutes for Research and
Westinghouse Learning Corporation

Science--A Process Approach
Developer: American Association for the Advancement of Science

Science Curriculum Improvement Study
Developer: Science Curriculum Improvement Study Project
University of California, Berkeley

Sesame Street
Developer: Children's Television Workshop

The Sullivan Reading Program
Developer: Sullivan Associates
Menlo Park, California

The Taba Social Studies Curriculum
Developer: The Taba Social Studies Curriculum Project
San Francisco State College

The Talking Typewriter or
The Edison Responsive Environment Learning System
Developer: Thomas A. Edison Laboratory,
a Subsidiary of McGraw Edison Company

Variable Modular Scheduling Via Computer
Developer: Stanford University and
Educational Coordinates, Inc.