

A report  
to Carnegie Corporation  
of New York ---

THE POTENTIAL USES

OF

TELEVISION

IN

PRESCHOOL EDUCATION

by

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## INTRODUCTION

The following is a report of recommendations as to possible uses of open-circuit television to stimulate the intellectual and cultural growth in children of preschool age. The report is based on a four-month survey of opinions of leading cognitive psychologists and educators in the field of preschool education, as well as of television producers, film makers and other specialists in the field of children's entertainment. It draws also from extensive research into old and new visual material that could be used or adapted for use on television.

## SECTION I - The Preschooler and Preschool Education

The number of three, four and five-year-old children in the United States has been estimated at around 12 million. In the past few years, this population, once the most neglected, educationally speaking, has marched to the center of the stage. The reasons for this new interest among educators in preschool education are several. The most urgent and best known to the general public centers around the academic achievement gap between disadvantaged and middle class children that manifests itself during the early school years and increases dramatically in the higher grades. The conviction that disadvantaged children are inadequately stimulated and motivated during the preschool years and the belief that the right kind of early intervention can provide adequate compensation have done much to create the present ferment in cognitive development research and preschool education.

The national awakening to the need for more and better education up and down the line is also a factor in the current interest in the years before school. Project Head Start, a massive federal program designed to help disadvantaged preschool children, was only in its second year, when the Educational Policies Commission of the National Education

Association proposed that "all children should have the opportunity to go to school at public expense beginning at the age of four."

Substance aside for the moment, the physical statistics alone suggest the proposal will encounter staggering obstacles. Nearly half the nation's school districts do not now have kindergartens (though about 71% of the country's five year olds are in either nursery school, kindergarten or first grade.) If the NEA's recommendation went into effect tomorrow, about 5,000,000 more four and five year olds would be added to school rolls. If it is remembered that most big urban school systems already rely heavily on part-time teachers and that colleges are just beginning to set up large scale preschool teacher-training programs, the dimensions of the problem of educating all four and five year olds in classrooms begin to emerge. We must add to these statistics the estimated cost of \$2.75 billion a year to handle the extra children -- an estimated cost that does not take into consideration the building of new classrooms.

All of this suggests that most four year olds and many five year olds will not be admitted to our public schools in the foreseeable future, and in the opinion of many qualified observers, most will not receive the optimal intellectual stimulation in the home to fully challenge and

train their rapidly developing intelligence.

Admittedly, the need of most middle class children for more early stimulation is by no means as acute as that of most disadvantaged children, but we nonetheless may have drawn the lines too sharply between the two groups. Most cognitive psychologists agree that the experiences of the first six years are critically important. As the great Swiss psychologist, Jean Piaget, has said, "the more a child has seen and heard, the more he wants to see and hear." Researcher Benjamin Bloom finds that a very favorable environment in the first four years can affect intelligence by about 2.5 I.Q. points a year, whereas from eight to seventeen, it will affect intelligence by only 0.4 points a year. Clearly, the implications apply to all children. Many observers question whether the average middle class home or even the average nursery school and kindergarten provide the best atmosphere for emotional, physical and intellectual growth.

Basic research into how children learn and what exactly they should be taught in the early years is inconclusive. Traditionally, educators of preschool children have stressed free play, singing, games, stories, conversational exchange, etc. Self selection of most activities is considered a sacred precept -- the child incidentally learning all that

is intellectually appropriate to his age and stage. Great emphasis is placed on emotional and social adjustment.

There has, of course, been growing opposition to this traditional approach. Carl Bereiter of the University of Illinois advocates what might be called a direct frontal assault on the preschooler's intellectual development. He has been successfully teaching four-year-old disadvantaged children to read and do arithmetic with no apparent harmful effects on the children. Some private schools for preschool children have been stressing academic and intellectual development for a number of years. The Montessori techniques that emphasize self-correcting sensory-motor tasks, as a means to intellectual development, are increasingly being employed in nursery schools. Although reliable data from these sources on the efficacy of any given approach is scarce, academic researchers have provided us with enough information to suggest that traditional workers in the field may have been laboring under several misconceptions.

Nearly everyone would agree with them that the best basis and preparation for intellectual learning is the child's sense of well-being and emotional adjustment. But, have they been employing the best methods to help the child to make this adjustment? If the child adjusts to the world by becoming familiar with it, by knowing something about it,



incorporating it, mastering it, then isn't it our responsibility to give him the tools he needs for this mastery? Annemarie Roeper\* has stated, "good adjustment is a basic necessity for learning, but learning also makes for good adjustment." She defines the important tools as the ability to think critically, to know valid reasons, to learn certain cause and effect relationships, and to get certain useful information and relevant facts.

One must also question the concept of difference between work and play that seems to prevail in traditional nursery school. A growing number of educators are coming to the conclusion that it is an artificial division, imposed by adults. One need only observe, for a few hours, any good Montessori class to verify that children receive pleasure from achievement and mastery and do not differentiate between work and play. Throughout the course of this study, I repeatedly saw children totally absorbed when engaged in tasks, scaled to their abilities, which either they had staked out for themselves, or, for that matter, had been assigned. Conversely, I saw a number of apparently bored children, drifting aimlessly from toy to toy, often exhibiting aggressive behavior toward each other, when on their own

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- for gifted children in Detroit, Michigan

during the long free play periods so integral a part of most nursery schools. (Annemarie Roper notes that the behavior of her preschoolers has become noticeably less aggressive since the preschool has become intellectually oriented.)

Another myth that has been handed down over the years has to do with the young child's short attention span. No one who has observed children doubts that they are easily distracted. But, the traditional nursery school, with twenty or more three and four year olds in a room full of toys and equipment, may not, after all, be the ideal place to formulate conclusions about the attention span of young children. Whether or not many hours of viewing television is good for children, we do know that they are capable of long periods of absorption in all kinds of television programs. We know, too, that a young child will remain with a given task or project if it interests him, for surprisingly long periods of time. The experience of any parent who has read story-books to his children will confirm the fact that even very young children can remain interested to a point beyond the parent's endurance.

Until recently, it appears, far from considering the "whole child", educators were virtually ignoring the intellect of preschool children. They seemed to proceed on the notion that, between birth and five years old, a child's

physical and emotional development (rather arbitrarily, it seems to some) should take precedence over his intellectual development. Indeed, we may have been performing a tragic disservice to young children by not sooner recognizing that their emotional, physical and intellectual needs are doubtless interdependent from infancy on. Just as we have long known that we must provide certain ingredients to foster healthy physical and emotional development, so we are at last beginning to inquire into specific actions we might take to help the child realize his full intellectual potential.

But, the national need for more and better educated people and the national demand that we give the disadvantaged child a fair chance at the beginning mean that we cannot wait for the final and definitive word from the researchers, or until there are enough teachers and classrooms to accommodate our preschool population. We must begin to search for new means and techniques to solve our educational problems. It is the recommendation of this report, therefore, that television's potential for fostering the intellectual and cultural development of young children be fully tested and evaluated, beginning in the near future.

SECTION II - Television and the Preschool Child

Although several studies have been done on the effects of mass media on children, none, to my knowledge, has been done on the effects or impact of television on children as young as three, four and five years of age. However, reports from parents, observation, and the studies of older children and the mass media provide us with certain clues about television and the preschool child.

Wilbur Schramm, Jack Lyle and Edwin B. Parker report in their study Television in the Lives of our Children:

"The first direct experience with television typically comes at age two. Chances are, the child will eavesdrop on a program someone else has tuned in. But he soon begins to explore the world of television and to develop tastes and preferences of his own. By the age of three he is able to shout for his favorite programs... By the age of three, then, the average child is already making fairly regular use of television. He sees a number of 'children's programs', soon branches out into westerns and similar entertainment."

The final sentence of the above quote is perhaps the most significant. It points out that very young children regularly view adult action programs. My own limited poll bears this out; it is difficult to find a young television viewer from Harlem to Greeley, Colorado, who does not cite "Batman" as his favorite television program. Beginning at an early age, we can assume, children are conditioned to expect pow! wham! fast action thrillers from television and certainly highly visual, slickly and expensively produced material. It is clear, also, that for whatever reasons, young children rather quickly graduate to the same shows that their older siblings and their parents view and enjoy, although they do not necessarily lose interest in their favorite children's programs -- at least for a time.

A word about children's programs. Most of those commercially sponsored, seem to be inordinately noisy and mindless affairs. Unfortunately, most serious efforts to provide educational fare for young children have been undertaken on a local basis only, by impecunious educational television stations, and are too often marked by a slow and monotonous pace and a lack of professionalism. One wonders if even such an erstwhile national favorite as "Ding Dong School" would be popular today, in light of the widespread viewing by children of adult programs. My own feeling is

that it would not, that if we are going to attract children to quality children's programs, they must have many of the production values (meaning pace, humor, professional performing talent, film inserts, animation and so forth) to which today's young children have become accustomed.

Anyone who has small television viewers at home can testify to the fascination that commercials hold for children. Parents report that their children learn to recite all sorts of advertising slogans, read product names on the screen (and, more remarkably, elsewhere), and to sing commercial jingles. It is of course open to serious question how valuable the content is that these commercials teach, but they do prove a point: children can and do learn, in the traditional educational sense, from watching television.

If we accept the premise that commercials are effective teachers, it is important to be aware of their characteristics, the most obvious being frequent repetition, clever visual presentation, brevity and clarity. Probably, then, their success is not due to any magic formula. Instead, television commercials appear to have adopted what have always been effective teaching techniques; unfortunately for our children, many teachers may have forgotten what Madison Avenue, with consummate skill, has cribbed from them.

One highly relevant effect reported by Wilbur Schramm

and associates, in their comparison of viewing children with non-viewing children, is that those growing up with television appear to come to school with about a one-year advantage in vocabulary. It is interesting to note that the advantage is not maintained (in the sixth and tenth grades, the two groups did not differ in their total information level), but it is also well to remember that the advantage was gained, incidentally, from viewing entertainment programs. (Incidental learning of all kinds from television programs has created some rather amusing gaps in the knowledge of young children. It is not uncommon to find that a child has no idea where apples come from, but can give you a fairly accurate, if rudimentary account, of how to get a rocket into outer space.)

Schramm's observation raises a troublesome question about television's effect on disadvantaged children. Why, when we know they watch as much, if not more television than middle class children, is their language and conceptual framework not more noticeably altered? There are several possibilities. One is that the language a child hears in a middle class home is constantly reinforced by television and vice versa while the slum home offers little or no reinforcement. Another possibility, of course, is that large amounts of what is said on most shows simply go over the heads of

many young disadvantaged children. It may be that the visual action provides enough of interest to hold their attention. In any case, how television can best be used to educate disadvantaged children, or even, if it can, are urgent questions for both researcher and broadcaster.

As I have said, there is little scientific data on the impact of television on young children, but Schramm and associates, after their study of older children and television, inferred the following about the medium as a teacher of very young children:

".....We should expect that the greatest amount of learning from television would take place in the early years of a child's use of it. The ages from three to eight, let us say, would be the time when television would have the least competition. The child's slate is relatively clean. Almost any experience is new to him and therefore absorbing. And television, as we know, has an enormous power to absorb the attention of a young child. After the child starts school, television has greater competition for attention and interest. But in the years before a child starts to



read, when his horizon is still narrow  
and his curiosity boundless, when almost  
everything beyond his home and his little  
family circle is new -- that is the time  
when television has a unique opportunity  
to contribute information and vocabulary  
skill."

SECTION III - What Leading Educators Think About A  
Television Series For Preschoolers

During the course of this study, I met with a number of eminent cognitive development psychologists, preschool education researchers, teachers and specialists throughout the United States and Canada. (A list of those consulted is attached.)

There was amazing consensus among the educators (with two notable exceptions, which I'll discuss later) as to the potential value of a regularly scheduled television program for preschoolers; almost no one doubted that television could play a potent role in preschool education. Perhaps even more surprising is the fact that there was little disagreement on what kinds of things a television program should attempt to teach young children.

Nearly everyone with whom I met liked the idea of a daily, hour-long program designed to be viewed at home by three, four and five-year-olds. Nearly all suggested that the program, in addition to teaching such traditional "soft" subjects as arts and crafts, music and rhythm, singing and so forth, could also effectively teach intellectual concepts of all kinds, including language concepts and skills, number concepts and simple scientific concepts. All considered language singularly important. Most wanted to see the

teaching of cognitive habits (Jerome Kagan, Harvard psychologist, defines these as analysis, generating hypotheses and reflection) emphasized over factual information or academic skills. Almost all opposed trying to teach young children to read, via television. In other words, in the opinion of most, a television program would be very useful which would teach young children how to think, not what to think.

Almost all of those interviewed wanted the letters of the alphabet and their sounds, as well as numbers introduced. On this point, however, vigorous dissent was registered by Judith Cauman, Project Head Start's Senior Education Specialist, who objected on the basis that the introduction of letters and sounds was tantamount to teaching young children to read and that this would lead to over-anxious middle-class mothers forcing their children to watch the program. (Other people in the field would agree that this is a risk, but one that is worth taking.)

Everyone, without exception, advanced the view that the children should be encouraged, and provided every opportunity to interact with the program, by singing, dancing, clapping, and answering questions, so viewing would be active, not passive. In line with this, the consensus was that inexpensive kits of materials and books should be sold or distributed in some way, in conjunction with the program.

Activities, it was suggested, could be demonstrated on the program which could be performed (with the kits and books) following each program. All felt that the stations carrying the program would have to enlist the cooperation of the existing local institutions, such as libraries, schools, welfare departments and poverty programs, to help promote the program, books and kits.

A number of those interviewed felt that the personality of the host or hostess was an important element. Jerome Kagan suggested that the host be male in an effort to defeminize the early learning atmosphere. He notes that boys have a much higher rate of school problems than girls, and that this could be due to the predominantly feminine atmosphere of home and school.

Most thought that fun ought to be a chief characteristic of the program; some even stressed fun and amusement over educational content.

Virtually everyone I saw suggested that a weekly, half-hour program for parents was a necessity for the success of a children's series. A few felt a parents' program was even more important than one for children. Most agreed that the parents' program should not only alert parents as to what was coming up for the week on the children's program, but that it should also deal with some of the typical problems

of rearing young children. Dr. Nathan Talbot, Chief of the Pediatrics Division of Massachusetts General Hospital, hoped that highly polished dramatizations of family problems, especially as they affect children, could be presented.

The sharpest disagreement that emerged was over whether or not one series of programs could be of real value to both middle class children and disadvantaged children. Close to half of those I saw inclined toward the view that the lack of language development in disadvantaged children created a qualitative difference between them and average middle class children, while the others seemed to think that the differences were essentially quantitative -- that some children were merely at an earlier level of development than others. That is, that a five-year-old disadvantaged child, due to environmental deprivation, was perhaps at the same level of development as a three or four-year-old middle-class child.

Two of those with whom I met provided lively dissent to the whole concept of the program. One was Harvard psychologist Sheldon White. While not adamantly opposed to an educational television series for preschool children, he nonetheless was skeptical that such a program could be of real value. His doubts stem from his view that three, four and five year olds learn, episodically and incidentally, from all experience, including television, and that "good" or

"bad" television is irrelevant during this period of development, since, according to this theory, children are not following the plots of the shows they watch. Furthermore, he says, there is evidence to indicate that children become more visual and auditory after five. (On the other hand, the work of Dr. Samuel Rabinovitch, of McGill University and Montreal Children's Hospital, indicates that vision leads and organizes from infancy on and that young children can learn easily and well how to perform a given task from merely watching someone else perform it.)

Carl Bereiter objected to the project as outlined on two main counts. He thought it was being conceived at too advanced a level for disadvantaged children (and even most three year olds) and that its aims were too general. He would like to see an academically-oriented program which would teach, directly, only language skills and concepts, arithmetic and reading. My own view is that it is possible to design a program for all children that takes Dr. Bereiter's objections into some account. I will be dealing with possible special uses of television for disadvantaged children in a later section of this report.

The best summary of the majority position was supplied by Jerome Bruner, the cognitive psychologist at Harvard. We cannot wait for the right answers, he felt, before acting;

rather we should look upon the first year of broadcasting for preschoolers in the nature of an inquiry. There is no substitute for trying it, and evaluating its effects, if we wish to know whether or not television can be a valuable tool for promoting intellectual and cultural growth in our preschool population.

SECTION IV - Recommendations for a Television Series

Based on my conversations with researchers and educators, television producers, representatives of other broadcast organizations and on extensive research into available material that could be used on television, I believe it is both feasible and desirable to develop an imaginative, entertaining and well-produced series of programs for young children, which would contain a high degree of educational content. It is my recommendation that such a series of programs be developed along the following lines:

A. General and Specific Aims

The general aim of the television series would be to foster intellectual and cultural development in preschoolers. Let's Look at First Graders, a publication prepared by the Educational Testing Service for the Board of Education of the City of New York, identifies the areas of intellectual development as

1. Basic Language Skills
2. Concepts of Space and Time (shapes, forms, spatial perspective, the notion of time)
3. Beginning Logical Concepts (logical classification, concepts of relationships)
4. Beginning Mathematical Concepts (conservation of quantity, one-to-one correspondence, number relations)



5. The Growth of Reasoning Skills (cause and effect, reasoning by association and inference)

The publication lists four general signs of development which also suggest broad goals for the program.

They are:

1. Growing Awareness and Responsiveness
2. Directed Activity
3. General Knowledge
4. Developing Imagination

More specifically, Carl Bereiter and Siegfried Engelmann, in their book Teaching Disadvantaged Children in Preschool, have listed what they consider the minimum abilities needed by a child about to enter first grade. In my opinion, the list suggests highly useful minimum educational aims for the program:

1. Ability to use both affirmative and not statements in reply to the question "What is this?"  
"This is a ball. This is not a book."
2. Ability to use both affirmative and not statements in response to the command "Tell me about this \_\_\_\_\_" (ball, pencil, etc.)  
"This pencil is red. This pencil is not blue."
3. Ability to handle polar opposites ("If it is not \_\_\_\_\_, it must be \_\_\_\_\_") for at least four concept pairs, e.g., big-little, up-down, long-short, fat-skinny.

4. Ability to use the following prepositions correctly in statements describing arrangements of objects: on, in, under, over, between. "Where is the pencil?" "The pencil is under the book."
5. Ability to name positive and negative instances for at least four classes, such as tools, weapons, pieces of furniture, wild animals, farm animals, and vehicles. "Tell me something that is a weapon." "A gun is a weapon." "Tell me something that is not a weapon." "A cow is not a weapon." The child should also be able to apply these class concepts correctly to nouns with which he is familiar, e.g., "Is a crayon a piece of furniture?" "No, a crayon is not a piece of furniture. A crayon is something to write with."
6. Ability to perform simple if-then deductions. The child is presented a diagram containing big squares and little squares. All the big squares are red, but the little squares are of various other colors. "If the square is big, what do you know about it?" "It's red."
7. Ability to use not in deductions. "If the square is little, what else do you know about it?" "It is not red."
8. Ability to use or in simple deductions. "If the square is little, then it is not red. What else do you know about it?" "It's blue or yellow."
9. Ability to name the basic colors, plus white, black, and brown.
10. Ability to count aloud to 20 without help and to 100 with help at decade points (30, 40, etc.)
11. Ability to count objects correctly up to ten.
12. Ability to recognize and name vowels and at least 15 consonants.

13. Ability to distinguish printed words from pictures.
14. Ability to rhyme in some fashion, to produce a word that rhymes with a given word, to tell whether two words do or do not rhyme, or to complete unfamiliar rhyming jingles like "I had a dog and his name was Abel; I found him hiding under the \_\_\_\_\_."
15. A sight-reading vocabulary of at least four words in addition to proper names, with evidence that the printed word has the same meaning for them as the corresponding spoken word. "What word is this?" "Cat." "Is this a thing that goes 'Woof-woof'?" "No, it goes 'Meow'."

The foregoing goals and definitions are almost solely concerned with intellectual development, while the proposed program would aim at fostering cultural development as well. Specifically, I would add as objectives, learning basic music concepts, and an ability to use arts and crafts material in a meaningful way. (While music and art have value in and of themselves, they also provide effective tools for getting across language concepts, and for increasing auditory and visual discrimination).

Another goal which I would include is beginning awareness of basic emotions (aggression, fear, etc.) as a step toward mastering them.

B. The Problem of Differences Among Three, Four and Five-Year-Olds

Because of the differences in the level of development that are apt to exist among three, four and five year olds, I would suggest that each program proceed from simple concepts to more complex concepts. Often it would be possible for a single segment within the program to proceed from simple to more complex. If the program were well-produced, there is reason to believe that five-year-olds would enjoy their fairly easy mastery of the simpler material, while three year olds would get enough out of the more complex material to hold their interest.

In their book, For the Young Viewer, Ralph Gerry, Frederick B. Rainsberry and Charles Winnick write:

"One difficulty in the way of matching age levels with program types is that the further we move away from infancy, the less exact is any cataloguing of interests by age. Another difficulty is that there is some overlap. While children are likely to regard as 'kid stuff' material that has been of interest to them in the past,

they will tend to be interested in programs directed to the next higher age level as well as their own."

On this same point, William Kessen, the Yale psychologist, suggests that a three year old watching "Batman" gets from it something quite different from what a ten year old watching the same program gets, but it nonetheless appeals to both.

C. Format and Frequency

To achieve maximum impact and to establish regular viewing habits, I believe the program should be hour-long, Monday through Friday. Ideally, each station carrying the program should broadcast it twice a day -- at 9 a.m. and 5 p.m. However, if the station's schedule permits broadcast only once a day, the late afternoon time is preferable because, regardless of circumstance, most children are home by 5 p.m.

For the greatest flexibility, I suggest the programs have a magazine type of format so that each program would contain several five to fifteen-minute segments, presenting different material and activities in a variety of production styles (i.e., film, studio, animation, etc.)

I recommend that the program have a male host who would provide continuity from one segment to another, establish the tone, and function, subtly, as the master teacher. While there is doubtless real entertainment value in his having a slightly off-center personality, he should, nonetheless, project the image of an intelligent and skilled adult whom the children are apt to want to emulate. The program, of course, would have several other regular performer-teachers as well.

Since several ETV television stations, including Channel 13 in New York, will have the ability to broadcast in color next year, and since color television sets are expected (in a report by Nielsen to The National Broadcasting Company) to be in 42% of all households by 1968, I strongly urge that the series be made in color. Although making the programs in color would increase costs somewhat, this added expense would insure that the series would remain technically up-to-date for the foreseeable future.

D. Ways Television Can Both Entertain  
and Teach Young Children

All of this, of course, leads us to the fundamental question: can a television series be designed which would be attractive to and fun for children, which they would want to watch without parental

coaching, and which would actually realize the general and specific educational aims that have been suggested? I believe the answer is an emphatic yes. I will outline briefly some of the ways television could be used to entertain and teach young children, but it is well to remember that any group of creative people brought together to produce such a series would devise many, many more.

a. Teaching Language Skills and Reasoning Skills on Television

All children like to be read to and most seem to like to discuss the ideas and pictures in story-books. I suggest that we could capitalize on these interests by devoting ten to fifteen minutes, probably as the opening segment of each program, to story and conversation. The discussion could take place between three 'regulars' -- a woman who would do the reading, an intelligent child of twelve or so, and a little puppet who would provide humor in the form of wrong answers, simplemindedness and general clowning. The children in the viewing audience at home would be encouraged to correct him when he was wrong or particularly

