ABSTRACT
              This review of early childhood research examines what
has been accomplished in the field and what questions now need to be
answered. Project Head Start has had the effect of helping
development .1 psychology to become more comprehensive and less
ethnocentric than previously. Developmental psychologists are now
studying infants and toddlers and the preschool child's total
functioning. Educational researchers are currently reacting to the
apparent failure of public preschool programs to improve the later
school achievement of disadvantaged children. The trend will probably
be toward a wider range of options concerning types of early
education. Developmental research in early education, involving
studies of how and when particular skills and content can best be
learned, is necessary to create an effective instructional program.
Little research has been done on the developmental characteristics of
3- and 4-year-olds, and few instructional programs have recognized
the important role fantasy and spontaneous play have in a child's
cognitive development. The scope of research in early childhood
education needs to be broadened and put in a more comprehensive
developmental framework, although approaches are becoming
increasingly sophisticated. Involvement with collecting and analyzing
data has widened the distance between the researcher and the
researched, and researchers should use the current period of limited
funding to rethink and reorder priorities. Researchers might
investigate the child and his family, the classroom and the teaching,
the teacher's role, and institutional setting, and research and the
researcher. (KM)

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EARLY CHILDHOOD RESEARCH: SECOND THOUGHTS AND NEXT STEPS

In the past decade the period of early childhood has received

unprecedented attention from psychologists and educators and from the

public. During these years hundreds of experimental studies and

demonstration projects have focused on the young child's development and

learning, both as an individual, and in groups. The research reports

must be weighed by the ton.

Where is all this leading us? To expanded programs of early education?

To better support for comprehensive child development programs? To more

research and development? The answers to these questions are not un-

equivocal but there is some reason to believe that the heyday of early

childhood education expansion is, if not over, at least threatened. We

may not yet have reached the "morning after" but there are indications

on all sides that a period of sober reflection is in order. The

challenges posed in articles as those by my colleague William Rohwer (1971)

in the Harvard Education Review and by Raymond Moore (1972) in a recent

issue of Harpers are real. They will not go unnoticed by either the public

or by policy makers.

In a sense both Rohwer and Moore contend that the available research

does not justify further expansion of early education, at least of a school

centered sort. Moore, particularly, urges that children possibly up to

the age of seven or eight, not be subjected to what he calls "early

schooling," unless and until research indicates that such is clearly

beneficial and in no way harmful.

My contention is that both the temper of the times and today's social realities, including changing family patterns, and the nature of much of our housing, have created an inevitable demand for early education. Many parents are in desperate need of care and education beyond that they themselves give their children. The kinds of options available to them seem to me likely to depend more on political realities than on the state of the knowledge on which such care and education might be planned.

This statement does not mean that the researchers should now abdicate their scientific roles for political roles. It does mean that the educational researcher, like the rest of his colleagues in science and technology, cannot isolate himself from the social and political context in which he works. Nor, I think, can he escape the fact that whatever practices derive from his theory and research have their social, moral and ethical consequences.

For purposes of this paper I shall try to avoid the rhetoric attendant upon an examination of the large consequences inherent in early childhood research, and look rather to what does seem to have been accomplished, and to what seem to be some of the questions that now need to be answered.

What I have to say is based mostly on impressions from reading some of the research reports and many of the review articles that have appeared recently, scanning the developmental and educational psychology journals, and the ERIC materials related to early childhood.

Early childhood research encompasses both the basic psychological research related to development and learning, and that dealing more specifically with the child in the educational setting. While the latter concern is of major consideration here, some consideration needs also to be given more basic research.

Basic Psychological Research

As Bettye Caldwell (1970) has said, the initiation of Project Head Start in 1965 gave instant status to a field (early childhood education) that had long been a step-child of both education and psychology. The politics of the time provided many psychologists the opportunity to validate certain aspects of developmental and learning theory in natural settings, such as Head Start, and more importantly in experimental programs where closer monitoring was possible.

New avenues of inquiry opened as three-, four- and five-year-olds of widely differing backgrounds became readily available for the research of psychologists who had previously worked with older children or with middle class nursery school and kindergarten youngsters. Initially, it is true, they tended to treat the cultural differences they found as deficits. Gradually, however, many have moved toward the view that learning and thinking cannot be adequately understood apart from their cultural context. Certainly, if developmental psychology is more comprehensive and less ethnocentric than a decade ago, Head Start and other innovative early childhood programs have contributed to the change.

As of now, the initial excitement over increasing intelligence and
achievement by providing preschool curricula based on particular psychological
theories has died down. Harder questions are being examined. The preschool
child's total functioning is under closer scrutiny.   Attentional and
motivation factors are being examined. His play is beginning to receive
serious consideration. Researchers are no longer limiting their interest
to the readily accessible three- and four-year-olds but are extensively
studying infants and beginning to devote attention to the toddlers. In
occasional instances, psychologists are moving back and forth between the
laboratory and the classroom, using the latter to validate and illuminate
the findings of the former. Longitudinal studies, essential if we are to
have any grasp of the ultimate effects of intervention or of different
ways of child caring and education, are under way.   The knowledge
base on which early childhood education can be built is expanding and
undergoing revision.

To some extent current early childhood education reflects this expanding
knowledge base. But it also shows some lag.

Educational Research

Michael Katz in his book Class, Bureaucracy and the Schools (1971)
notes that the recent expansion of education downward in the attempt to
                              of young children
improve the intellectual skills was parallelled by the nineteenth century
introduction of the kindergarten to improve attitudes and correct un-
favorable home influences. The kindergartens, it seems, did not have to
provide the scientific evidence of accomplishment that is expected from
the present day programs.

After the initially promising reports from small scale experimental programs the negative findings of the   Westinghouse report on Head Start, 1968, led to a "national debate" (Hellmuth, 1970) that continues. Meanwhile, what might be termed the side effects of Head Start, including such changes as the increased involvement of parents in school and community affairs, and the improved availability of health and other services have teen examined (Kirschner-Associates, 1970). Follow through programs of differing kinds have been put into operation. Research designed to compare the relative effectiveness of different curriculum models is underway (Planned Variation, 1971). By the end of 1971, the available evidence from a number of evaluative and comparative studies of Head Start and other experimental programs had been reviewed several times. (See for example, Datta, 1972; McFadden, 1970; Miller, 1972; Stearns, 1971). The research problems were given major prominence in Volume 3 of the Disadvantaged Child, edited by Hellmuth, and also in the 1972 Yearbook of the National Society for the Study of Education.

Stearns (1971) in a report to the Office of Child Development, summarizes the evidence succinctly. She notes that, over the short run, public preschool programs have been successful in changing the intellectual and social behavior of disadvantaged children in positive directions. In small scale expertly staffed experimental programs, the improvements in measured intellectual abilities have been even more striking. However, after several years the children who have had the preschool experience show no advantage as far as school achievement is concerned over those who did not have it.

Reactions to the "Failure" of Early Intervention

These findings have brought forth a range of reactions on the part of the researchers, policy makers and the public. Such reactions are, of course, tied to the reactor's views of what is going on in other aspects of our society, and to his theories of development and learning. Accordingly they are more complex than are the three categories that I am assigning them.

First, "let's abandon the effort to extend public education downward." This reaction finds support in current studies purporting to show that schooling makes relatively little difference in adult status and income (Bane and Jencks 1972). Such a reaction also finds some support among those who have come to recognize that many, if not most, of the preschool programs have been culturally biased to a limited middle class view not only in goals and tests but also in program content.

A second reaction is "put the responsibility for early education back in the home where it belongs." This reaction receives support from the finding that the most effective experimental programs have been characterized by parental understanding of program purposes and by enlistment of the mother as a teacher either in the classroom or the home. Research in infancy is also called on to support this view.

A third reaction comes from those with a so-called "traditional" nursery school view. It says, "let's take the cognitive pressure off the preschooler and give proper attention to his social and emotional development." This reaction goes along with the statement John Anderson

made about the content of preschool programs nearly twenty-five years
ago. "It is not what the child learns in formal terms which is important,
but what he gains from experiences in the way of self-control, emotional
balance, initiative, interest, and enthusiasm for the material in question."
Unfortunately, while it has been possible, albeit roughly, to measure
cognitive gains, whatever social and emotional benefits have accrued in
the experimental programs have been difficult to measure.

It seems to me unlikely that any of these reactions clearly point
the direction early education, particularly that for the child between the
ages of three and five is likely to take. It is true that kindergartens
have only gradually been accepted as an integral part of public schooling
and still have some way to go in that direction. But it is also true that,
apart from the public schools, a variety of private, cooperative, and
commercial ventures have made some form of early education available to
many parents. An increasing number of less privileged parents have also
enrolled their children in early childhood programs. From neither group,
I think, is there any ground swell of opinion urging the abolition of available
nursery schools, prekindergarten or kindergarten programs. Nor, I think,
is there any demand that early education, whether for three-, four- or
even five-year-olds should be made compulsory. But in both groups, I sense
a growing conviction that a wider range of options for parents, as
related to both education and care, is essential. Regardless of whether
these options are provided within the public school system or are developed
in the community and operated by the parents, there are any number of

persistent questions that can only be answered through research efforts.

Some of these areas of needed research require comprehensive planning,

beyond the scope of any single center, but others are more limited and could

be carried on by the staff and parents within a single center or group of

centers. We need the kind of research that helps us do a better job with children.

Strategies for Comprehensive Research

Carl Bereiter (1972), noting that, "existing technology already

enables us to teach young children far more than they can benefit from,"

suggests that what we need to do is to "construct articulated educational

programs that permit us to teach in the preschool what will be of use later

and to teach later what builds upon what was taught in the preschool."

He thinks there is little to be gained in research limited to the pre-

school level. Rather, preschool research should now be incorporated into

the programs of research at the elementary school level.   .

My colleague, William Rohwer (1972) takes a somewhat similar stand.

Drawing on his own research in verbal learning he proposes a strategy for

establishing how and when a particular skill or particular content can

be learned with ease. The strategy involves cumulative research using

tasks that tap a psychological process involved in school learning; applying

these tasks, which should resemble but also differ from typical school

tasks, over as wide a developemental range as possible to determine

possible developmental shifts; experimenting to find the conditions for

optimal performance at different ages and with different kinds of children.

Instruction would then be planned in accordance with the findings.

This strategy has considerable appeal, and might lead to a revolution in instruction if the array of psychological processes involved in school learning could be readily identified. Rohwer underscores his intent to search not for ways of making children precocious but for ways of assisting them to be optimally effective. Some of his work so far has led him to suggest that formal schooling might well be postponed to age seven or even later.

The Developmental Context of Instruction

The importance of developmental investigation as an inherent part of any attempt to move from the psychology of learning to a program of instruction cannot be overestimated. As Sigel (1972) has pointed out, the human organism is made up of a variety of subsystems - perceptual, cognitive, language, sensori-motor and so on. The relationships among these systems appear to differ at different stages of development and instruction related to a particular subsystem may have different effects on other subsystems at different points in time. The cumulative effects of instruction in one subsystem may also depend on the nature of the contexts for learning at succeeding stages of development.

Sheldon White (1970) has outlined the matrix of developmental changes that occur between five and seven years. His evidence, drawn from many different fields, highlights the many respects in which the preschooler thinks, learns and generally responds differently from the older child. of the 3 and 4-year old But the significance of the developmental characteristics does not seem to have been very deeply explored by either program developers or educational researchers. While some program developers in the decade of the 60's

did try to identify the psychological precursors of academic achievement, many resorted to analyzing the components of academic tasks confronting children in first grade, and then teaching the components to the four- or even three-year-olds that were enrolled. As Kagan (n.d.) puts it, the "major criterion of existing curricula is the heavy emphasis on teaching verbal concepts and rules with minimal appreciation of the variety of concepts and rules and minimal acknowledgment that the child's developmental stage is an important determination in his ability to understand a new cognitive unit."

Only a few programs have taken a view of cognition broad enough to include attention to other than directed thinking processes. Yet it may be that, from a developmental standpoint, the fantasy and spontaneous play that characterizes this period and the opportunities provided for them may have as much bearing on later development as does instruction in directed thinking.

In this connection it is interesting to note that Vygotsky (1962), who in general, w the necessity for instruction "marching ahead of development and leading it, being aimed not so much at the ripe as the ripening functions," considered play in the preschool period "to provide a background for changes in needs and in consciousness of a much wider nature than instruction." In this period, he believed, "play is the source of development and creates the zone of proximal development."

A longer term view of development that encompasses not only the kinds of knowledge emphasized in Piaget's theory but also personal, existential and aesthetic meanings might considerably alter current notions of appropriate experience for the preschool period.

Progress in the Last Decade

To suggest that the scope of research related to early childhood education needs to be broadened and put in a more comprehensive developmental frame need not be to the derogate of the work that has been done during the past decade. The clear light of hindsight illumines the naivete of some of the early assumptions, and the clumsiness of some of the research designs. But one has only to contrast the essentially post hoc Westinghouse Study with the Planned Variation and ETS longitudinal proposals to sense the increasingly sophisticated approaches to research related to early childhood education.

The progress made is even more striking viewed in a longer time perspective. The 1947 and 1972 N.S.S.E. Yearbooks were both devoted to early childhood education. In 1947 Ruth Updegraff wrote, "We are still far from the goal of one or more systematic educational philosophies evaluated by research." Twenty-five years later Gordon (1972) and Soar (1972) reported in considerable detail not only how curricula based on differing educational philosophies differed in goals, but also how they differed in operation and in effects on the children involved. In 1947 Updegraff noted in conclusion to her chapter on research and curricula "that threaded through it is the evidence of interrelationships of behavior and of total

environmental effects." These relationships, she added,"greatly complicate the problems of the research worker." In 1972, Messick and Barrows again comment on such relationships, but propose a methodology for dealing with them. They spell out in considerable detail, the domains in which measurement must occur if the effects of a particular intervention or program are to be adequately understood.

In some of these domains measuring instruments are already available, in others they must be developed. One hopes for caution and reflection here, for it is quite clear that many of the inadequacies of the presently available research stem from the use of instruments that were not really appropriate for the uses to which they were put.

In any event, at this point in time it is not clear whether many large scale studies, involving many children, and the manipulations of many variables, will be funded. Even if they should be, research of a rather different sort is also in order.

Within each of the measurement domains outlined by Messick and Barrows there are many questions that need to be answered. In many instances, small scale studies, perhaps replicated many times, seem in order. Furthermore, many questions cannot be adequately answered nor will whatever answers are found make any difference to early childhood education, unless ways can be found to involve both teachers and parents in the research process.

Scepticism About Research

It is no secret that educational research, and perhaps most especially, early childhood education resarch currently faces a credibility gap. Farents, particularly those in minority groups, but many others as well, are not inclined to give permission for their children to participate in any experiments. Research has no pay-off where they are concerned. They are no more sceptical than are many of today's college students. Finally, despite the fact that many of today's early childho~d teachers have been involved in various sorts of research, few of them ere asking for more involvement. Nor does there appear to be much evidence that whatever involvement they have had is reflected in different or more effective teaching.

In 1967, following a decade that had been noteworthy for the number of research and demonstration programs, many related to early childhood, Goodlad and Klein and a group of associates visited and observed in some one-hundred-and-fifty kindergarten and primary classrooms across the country. They sought evidence as to how the reforms implicit in the research and demonstration efforts were reflected in the classrooms. They found little. A later study of nursery schools brought equally dreary results. My own informal observations on two coasts have pinpointed some classrooms that clearly do reflect what has been going on in research and in innovative programs in the last decade. But they have not led me to believe that their effects are more widespread than Goodlad and Klein found.

The reason research has not been more effectively translated into practice may have to do with the nature of the research enterprise, and perhaps with its funding. The available research technology makes it quite possible   to collect and analyze data relating to a multiplicity of variables in quantities unthinkable a decade or two ago. The data and its analysis take on a reality and meaning of their own, quite apart from the educational situations and problems they represent. The distance between the researchers and the researched widens. Perhaps it can be said that as the cognitive distance between the research and its intended consumer increases, interest in applying it decreases. One is reminded of the old story of the farmer who informed the county agent that he had no wish to try any new methods. He already knew how to farm better than he was farming.

Whether or not involvement, as a par ..cipant, not merely a subject, in research having clear relevance to the classroom or to the children, would improve practice and increase parent and teacher support for further research is, of course, an empirical question.

Reference to the "action research" that was popular in the early 1950's may provide some clues for answering this question, but circumstances then differ in many respects from those today. Today's technology, both for research and for education has advanced ˆ r beyond that of the fifties. It is paralleled by even more spectacular advances in other areas, profoundly affecting our ideology.

Leon Kass (1972), in a recent issue of Science writes, "We are witnessing the erosion, perhaps the final erosion, of the idea of man as something splendid or divine and the replacement with a view that sees man no less than nature as simply more raw material for manipulation and homogenization." Hope, he thinks, "lies only in education, in a public educated about the ways and limits of science and enlightened in its use of technology." Further he suggests that the current lack of money for research gives time to rethink and reorder our priorities.

The situation with regard to early childhood education research is not dissimilar to that Kass describes for biological research. Funding is likely to be relatively limited. We too need time to rethink and reorder our priorities keeping in mind our concern for maintaining our humanness. What are some of the steps we might be taking?

Next Steps

We have only to look at what Messick and Barrows have identified as domains of largely unmeasured variables to formulate some of the questions researchers, together with parents and teachers, might investigate.

The Child and His Family

Consider first the child and his family. There should be no need to belabor the ethnocentric assumptions in much recent early childhood research and in many programs. With increasing awareness of the stereo-typing implicit in the nature of cultural deprivation, it may be possible to come to terms with the realities faced by parents in different groups and the specific nature of their strengths, their concerns and aspirations for their children as well as the specific nature of their relationships with them.

The notion of the "whole child" needs reconsideration, not as a cliche,
but with a view to better understanding of the meaning of individualization.
In the last decade many measures of cognition, many ways of looking at
cognitive processes in young children, have been developed. Is it not
time to examine more closely how such processes are reflected in the
social-emotional behavior of the individual child as well as in his
.chool tasks?   Are assessment procedures to be limited to cognitive
processes? What is a reasonable balance between time given to assessment,
time given to instruction and time for the child to proceed on his own?
Currently, at least in some parts of the country, and even as early as
kindergarten as much or more time is spent in assessment as in instruction,
with little if any time left for the child's autonomous investigation and
learning, for him to find out who he is.

While one finds in the current literature of early childhood education,
and in the research related to it, considerable emphasis on invividualization,
case studies of young children revealing the nature of their individuality
and its significance for their education are rarely encountered. Do we
not need in the 1970's researchers who will work with parents, teachers
and children to show now young Black, Chicano, Asian, Native American and
other children from varying backgrounds cope with their widening world,
much as Lois Murphy described Topeka children in the 1950's?

Ways also need to be found to get at the children's perceptions
of what goes on in the classroom. It is too easy to assume that their
performance reveals all they know or feel. How many times, for example,

have children presented a facade to the teachers such as that recently
reported by an anthropological observer (Burger, 1972). A group of
Spanish surname six-year-olds were being taught English in a behavior
modification program. They were not responding appropriately, giving
the teacher, for example, an orange when she asked for an apple. Once
the teacher left the room, however, the children with roars of laughter,
began an elaborate mimicry of the earlier task, first giving the
correct response to each object, and then chanting every possible wrong
name.

The Classroom and the Teaching

The classroom and the teaching each represent additional domains
for investigation. In recent research the curriculum model in use has
received major attention. Indeed, for a period of two or three years,
finding dimensions on which to categorize different curricula became a
preoccupation for many early childhood educators. Judging from the reports
of Gordon and of Soar in the recent N.S.S.E. Yearbook that preoccupation
has finally paid off, at least at the kindergarten and first grade levels.
Applying interaction analysis, adapted to identify both affective and
cognitive aspects and the sequences of teacher and pupil talk, to class-
rooms representing eight curriculum models, Soar was able to identify
three groups of classrooms within which the differences were not significant,
although the differences between the groups were significant. It should
be noted, however, that the variability within the classrooms representing
a single curriculum model was greater than the differences from model to
model.

The classroom processes revealed by the analysis were found to
relate to the cognitive growth of the children. Greater teacher direction
increased simple-concrete learning but at the expense of complex-abstract
growth. Soar (1972) notes, however, that there are limits with respect
to the amounts of pupil freedom, interaction and self-direction that
are functional.

Soar's study, taken in conjunction with Gordon's analysis of the
instructional theory underlying the various curriculum models raises a
number of questions about curriculum, more about teaching.

Aside from the differing reliance they place on workbooks most of
the curriculum models look surprisingly alike when seen in operation.
Each has a similar array of toys, games and audio-visual equipment, plus
the paint, clay, blocks, and in some instances housekeeping equipment
that has been standard in the nursery school for years. Does this
seemingly infinite variety of materials and equipment really enhance
the children's learning? Or does it merely reflect the American propensity
for conspicuous consumption? Clearly the teacher is under less pressure
to intervene in the children's activities, if there are enough, or more
than enough, materials to keep them busy on their own. But how do the
children use the materials? What ones are essential? What is gained by
adding others? Is it possible to have so many as to detract from both
the social and the cognitive interaction of the children? May the teacher
become so involved in the acquisition and upkeep and storage of
curriculum materials as to lose sight of their essential purpose?

As Weikart (1972) has commented, the curriculum is for the teacher
more than for the children. It may be useful to examine the elements of
the curriculum that further the fulfillment of the teaching role as
contrasted with those that may actually impede it. For it is the role of
the teacher that is the major difference between curriculum models.

The Teacher's Role

None of the models assumes that the teacher is a mere bystander.
The models differ, however, not only in the expected extent of the teacher's
involvement with the children but more importantly in the cognitive demand
that involvement places on her. Thus, Gordon's analysis of the models
finds that the Engelmann-Becker model requires the least cognitive
on the part of the teacher,
effort ∧ and the EDC model the most. These extremes reflect the prevailing
uncertainity as to whether the teacher is to be regarded as a professional
who makes decisions, or whether, in terms of some of the current pressure
for accountability, she is a piece worker who contracts to take a certain
number of children through a certain number of tasks in a pre-specified
time.

It is interesting to note that in some respects, particularly as far
as the management of the group and of materials is concerned, the role of
the teacher in the new models resembles that of the teacher in the
traditional nursery school more than that of the teacher in the traditional
elementary school. But, in general, the traditional nursery school

approach has not succeeded as well as the more innovative programs
when dealing with children in poverty areas. The difference, according
to Bereiter (1972) and others is that the traditional nursery school
teacher does not instruct. The "traditional approach," Bereiter says,
"does not represent a different way of teaching from those represented
in newer programs but simply represents a lower order of program, one
that is more custodial and less purposefully educational." "The true
issue," he adds, "is not how young children should be taught but
whether."

In contrast to this position, Weikart distinguishes between programs
that are custodial and those, like the traditional preschool programs
found on college campuses and originally envisioned for Head Start,
that are child centered. In these, the child initiates and the teacher
responds. When well implemented, he finds, these programs do as well for
disadvantaged children as other models. The crucial variable is the
teacher and the support she has.

Clearly, we need to know much more about the range of child initi-
ations and the variety of teacher responses to such initiations, that
is, more about the teaching process particularly at the preschool level.
Observational studies will help but are probably not sufficient. Ways
need to be found to reveal more than the teacher's responses. Are they
merely intuitive or are they guided by theoretical knowledge? It is
probably true for the preschool teacher, as Jackson (1969) reports for

the elementary teacher, that the ongoing demands of the classroom are too intense for on-the-spot reflection. But this need not preclude an analysis of the teacher's pre-planning in relation to what actually occurred, nor perhaps more importantly, a analysis of her reflections on those occurences.

Other questions need to be asked. For example, how does the teaching done by parent participants, volunteers, para-professionals differ from that done by the professionally trained teacher? Or does it differ initially and then come to resemble the teacher? Insistence that at least one member of the team needs professional training seems reasonable. But where are the data to show what the professional does differently from the less well trained? Are the differences important to the child's thinking and learning or may they merely reflect cultural differences in child rearing practices that have no necessary consequence to the child's eventual development? Obviously questions such as these cannot be easily or quickly answered, but it is clear that we need to look closely and carefully at the variety of strategies adults have for teaching the young child, and give consideration to their effects on him,

The fact that programs for three- and four-year-olds and to an increasing extent those for five- and six-year-olds increasingly involve the operation of a team raises additional questions about the teacher's role. How much of her time is spent in interaction, not with children

but with other adults, and what goes on in those interactions? What
effect does this changing and expansion of the teacher's role have cn
her effectiveness with children and on satisfactions she derives from it?

In the past it appeared that many individuals who elected to
teach at the earliest levels, did so because they preferred working with
children to working with adults. Is this true at the present time?

The researchers appear to agree that teachers differ in how well
they fill the teaching role but they seem not to have asked what
qualities in the teacher make for a good fit with a particular model.
Would a good Engelman-Becker teacher also be a good EDC teacher and
vice versa? Put another way, are self-selecting and matching processes
at work, so that the teacher teaches well if the curriculum and the age
period is one to which she is cognitively and emotionally well adapted?

And what if the teacher is a man? The increasing involvement of
men in early childhood programs provides an excellent opportunity to
examine some of the assumptions that have dominated teaching at this
level. Has it been dominated by feminine conceptions and goals? Do
those who are consciously aware of sex stereotyping teach differently from
those who are more traditionally oriented?

The Institutional Setting

Investigation of teaching should also raise questions about another
set of variables, those having to do with its institutional setting.
Preschool programs are now to be found in many public schools, but they

are also affiliated with a variety of community agencies, and in some
instances are relatively autonomous. Does the setting affect the teaching
and the program, and in what ways? The younger the children the less
amenable they are to the kinds of regulations that have come to
characterize many elementary schools. Are programs in schools more
constricted than those in other settings? What is the nature of the
interaction between the teachers and the administration? Does the pre-
kindergarten program tend to become isolated as it appears the kindergarten
did earlier or is it incorporated into the totality of the school?

Evidence related to questions such as these is particularly
important at this time when many people find persuasive the argument
that extension of public education downward can only result in the same
kind of bureaucratization that pervades elementary and secondary education.

Research and the Researcher

If bureaucracy is inherent in the public school system it is also
an inevitable concomitant of large scale research. Many of the questions
that I have raised here could be incorporated in a grand design, involving
many schools and centers, many children and many, many teachers in many
parts of the country. But we may be in a position to ask different and
better questions if we first pursue some of the questions we now have in
smaller ways, with the participation, not merely the cooperation, of
parents and teachers. When they are involved from the beginning, helping
to formulate the purposes of the research, considering the evidence to be

gathered, how it is to be validated, and how it is to be used, research

should take on new meaning, not as something esoteric but as a means to

the end of improved practice.

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ABSTRACT

        This review of early childhood research examines what
has been accomplished in the field and what questions now need to be
answered. Project Head Start has had the effect of helping
developmental psychology to become more comprehensive and less
ethnocentric than previously. Developmental psychologists are now
studying infants and toddlers and the preschool child's total
functioning. Educational researchers are currently reacting to the
apparent failure of public preschool programs to improve the later
school achievement of disadvantaged children. The trend will probably
be toward a wider range of options concerning types of early
education. Developmental research in early education, involving
studies of how and when particular skills and content can best be
learned, is necessary to create an effective instructional program.
Little research has been done on the developmental characteristics of
3- and 4-year-olds, and few instructional programs have recognized
the important role fantasy and spontaneous play have in a child's
cognitive development. The scope of research in early childhood
education needs to be broadened and put in a more comprehensive
developmental framework, although approaches are becoming
increasingly sophisticated. Involvement with collecting and analyzing
data has widened the distance between the researcher and the
researched, and researchers should use the current period of limited
funding to rethink and reorder priorities. Researchers might
investigate the child and his family, the classroom and the teaching,
the teacher's role, and institutional setting, and research and the
researcher. (KM)

Almy

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EARLY CHILDHOOD RESEARCH: SECOND THOUGHTS AND NEXT STEPS

In the past decade the period of early childhood has received
unprecedented attention from psychologists and educators and from the
public. During these years hundreds of experimental studies and
demonstration projects have focused on the young child's development and
learning, both as an individual, and in groups. The research reports
must be weighed by the ton.

Where is all this leading us? To expanded programs of early education?
To better support for comprehensive child development programs? To more
research and development? The answers to these questions are not un-
equivocal but there is some reason to believe that the heyday of early
childhood education expansion is, if not over, at least threatened. We
may not yet have reached the "morning after" but there are indications
on all sides that a period of sober reflection is in order. The
challenges posed in articles as those by my colleague William Rohwer (1971)
in the Harvard Education Review and by Raymond Moore (1972) in a recent
issue of Harpers are real. They will not go unnoticed by either the public
or by policy makers.

In a sense both Rohwer and Moore contend that the available research
does not justify further expansion of early education, at least of a school
centered sort. Moore, particularly, urges that children possibly up to
the age of seven or eight, not be subjected to what he calls "early
schooling," unless and until research indicates that such is clearly
beneficial and in no way harmful.

My contention ? that both the temper of the times and today's social realities, including changing family patterns, and the nature of much of our housing, have created an inevitable demand for early education. Many parents are in desperate need of care and education beyond that they themselves give their children. The kinds of options available to them seem to me likely to depend more on political realities than on the state of the knowledge on which such care and education might be planned.

This statement does not mean that the researchers should now abdicate their scientific roles for political roles. It does mean that the educational researcher, like the rest of his colleagues in science and technology, cannot isolate himself from the social and political context in which he works. Nor, I think, can he escape the fact that whatever practices derive from his theory and research have their social, moral and ethical consequences.

For purposes of this paper I shall try to avoid the rhetoric attendant upon an examination of the large consequences inherent in early childhood research, and look rather to what does seem to have been accomplished, and to what seem to be some of the questions that now need to be answered.

What I have to say is based mostly on impressions from reading some of the research reports and many of the review articles that have appeared recently, scanning the developmental and educational psychology journals, and the ERIC materials related to early childhood.

Early childhood research encompasses both the basic psychological research related to development and learning, and that dealing more specifically with the child in the educational setting. While the latter concern is of major consideration here, some consideration needs also to be given more basic research.

Basic Psychological Research

As Bettye Caldwell (1970) has said, the initiation of Project Head Start in 1965 gave instant status to a field (early childhood education) that had long been a step-child of both education and psychology. The politics of the time provided many psychologists the opportunity to validate certain aspects of developmental and learning theory in natural settings, such as Head Start, and more importantly in experimental programs where closer monitoring was possible.

New avenues of inquiry opened as three-, four- and five-year-olds of widely differing backgrounds became readily available for the research of psychologists who had previously worked with older children or with middle class nursery school and kindergarten youngsters. Initially, it is true, they tended to treat the cultural differences they found as deficits. Gradually, however, many have moved toward the view that learning and thinking cannot be adequately understood apart from their cultural context. Certainly, if developmental psychology is more comprehensive and less ethnocentric than a decade ago, Head Start and other innovative early childhood programs have contributed to the change.

As of now, the initial excitement over increasing intelligence and achievement by providing preschool curricula based on particular psychological theories has died down. Harder questions are being examined. The preschool child's total functioning is under closer scrutiny. Attentional and motivation factors are being examined. His play is beginning to receive serious consideration. Researchers are no longer limiting their interest to the readily accessible three- and four-year-olds but are extensively studying infants and beginning to devote attention to the toddlers. In occasional instances, psychologists are moving back and forth between the laboratory and the classroom, using the latter to validate and illuminate the findings of the former. Longitudinal studies, essential if we are to have any grasp of the ultimate effects of intervention or of different ways of child caring and education, are under way. The knowledge base on which early childhood education can be built is expanding and undergoing revision.

To some extent current early childhood education reflects this expanding knowledge base. But it also shows some lag.

Educational Research

Michael Katz in his book Class, Bureaucracy and the Schools (1971) notes that the recent expansion of education downward in the attempt to improve the intellectual skills of young children was parallelled by the nineteenth century introduction of the kindergarten to improve attitudes and correct un-favorable home influences. The kindergartens, it seems, did not have to provide the scientific evidence of accomplishment that is expected from the present day programs.

After the initially promising reports from small scale experimental programs the negative findings of the Westinghouse report on Head Start, 1968, led to a "national debate" (Hellmuth, 1970) that continues. Meanwhile, what might be termed the side effects of Head Start, including such changes as the increased involvement of parents in school and community affairs, and the improved availability of health and other services have been examined (Kirschner-Associates, 1970). Follow through programs of differing kinds have been put into operation. Research designed to compare the relative effectiveness of different curriculum models is underway (Planned Variation, 1971). By the end of 1971, the available evidence from a number of evaluative and comparative studies of Head Start and other experimental programs had been reviewed several times. (See for example, Datta, 1972; McFadden, 1970; Miller, 1972; Stearns, 1971). The research problems were given major prominence in Volume 3 of the Disadvantaged Child, edited by Hellmuth, and also in the 1972 Yearbook of the National Society for the Study of Education.

Stearns (1971) in a report to the Office of Child Development, summarizes the evidence succinctly. She notes that, over the short run, public preschool programs have been successful in changing the intellectual and social behavior of disadvantaged children in positive directions. In small scale expertly staffed experimental programs, the improvements in measured intellectual abilities have been even more striking. However, after several years the children who have had the preschool experience show no advantage as far as school achievement is concerned over those who did not have it.

Reactions to the "Failure" of Early Intervention

These findings have brought forth a range of reactions on the part of the researchers, policy makers and the public. Such reactions are, of course, tied to the reactor's views of what is going on in other aspects of our society, and to his theories of development and learning. Accordingly they are more complex than are the three categories that I am assigning them.

First, "let's abandon the effort_∧ to extend public education downward." This reaction finds support in current studies purporting to show that schooling makes relatively little difference in adult status and income (Bane and Jencks 1972). Such a reaction also finds some support among those who have come to recognize that many, if not most, of the preschool programs have been culturally biased to a limited middle class view not only in goals and tests but also in program content.

A second reaction is "put the responsibility for early education back in the home where it belongs." This reaction receives support from the finding that the most effective experimental programs have been characterized by parental understanding of program purposes and by enlistment of the mother as a teacher either in the classroom or the home. Research in infancy is also called on to support this view.

A third reaction comes from those with a so-called "traditional" nursery school view. It says, "let's take the cognitive pressure off the preschooler and give proper attention to his social and emotional development." This reaction goes along with the statement John Anderson

made about the content of preschool programs nearly twenty-five years ago. "It is not what the child learns in formal terms which is important, but what he gains from experiences in the way of self-control, emotional balance, initiative, interest, and enthusiasm for the material in question." Unfortunately, while it has been possible, albeit roughly, to measure cognitive gains, whatever social and emotional benefits have accrued in the experimental programs have been difficult to measure.

It seems to me unlikely that any of these reactions clearly point the direction early education, particularly that for the child between the ages of three and five is likely to take. It is true that kindergartens have only gradually been accepted as an integral part of public schooling and still have some way to go in that direction. But it is also true that, apart from the public schools, a variety of private, cooperative, and commercial ventures have made some form of early education available to many parents. An increasing number of less privileged parents have also enrolled their children in early childhood programs. From neither group, I think, is there any ground swell of opinion urging the abolition of available nursery schools, prekindergarten or kindergarten programs. Nor, I think, is there any demand that early education, whether for three-, four- or even five-year-olds should be made compulsory. But in both groups, I sense a growing conviction that a wider range of options for parents, as related to both education and care, is essential. Regardless of whether these options are provided within the public school system or are developed in the community and operated by the parents, there are any number of

persistent questions that can only be answered through research efforts.
Some of these areas of needed research require comprehensive planning,
beyond the scope of any single center, but others are more limited and could
be carried on by the staff and parents within a single center or group of
centers. We need the kind of research that helps us do a better job with children.

Strategies for Comprehensive Research

Carl Bereiter (1972), noting that, "existing technology already
enables us to teach young children far more than they can benefit from,"
suggests that what we need to do is to "construct articulated educational
programs that permit us to teach in the preschool what will be of use later
and to teach later what builds upon what was taught in the preschool."
He thinks there is little to be gained in research limited to the pre-
school level. Rather, preschool research should now be incorporated into
the programs of research at the elementary school level.   .

My colleague, William Rohwer (1972) takes a somewhat similar stand.
Drawing on his own research in verbal learning he proposes a strategy for
establishing how and when a particular skill or particular content can
be learned with ease. The strategy involves cumulative research using
tasks that tap a psychological process involved in school learning; applying
these tasks, which should resemble but also differ from typical school
tasks, over as wide a developemental range as possible to determine
possible developmental shifts; experimenting to find the conditions for
optimal performance at different ages and with different kinds of children.
Instruction would then be planned in accordance with the findings.

This strategy has considerable appeal, and might lead to a revolution in instruction if the array of psychological processes involved in school learning could be readily identified. Rohwer underscores his intent to search not for ways of making children precocious but for ways of assisting them to be optimally effective. Some of his work so far has led him to suggest that formal schooling might well be postponed to age seven or even later.

The Developmental Context of Instruction

The importance of developmental investigation as an inherent part of any attempt to move from the psychology of learning to a program of instruction cannot be overestimated. As Sigel (1972) has pointed out, the human organism is made up of a variety of subsystems - perceptual, cognitive, language, sensori-motor and so on. The relationships among these systems appear to differ at different stages of development and instruction related to a particular subsystem may have different effects on other subsystems at different points in time. The cumulative effects of instruction in one subsystem may also depend on the nature of the contexts for learning at succeeding stages of development.

Sheldon White (1970) has outlined the matrix of developmental changes that occur between five and seven years. His evidence, drawn from many different fields, highlights the many respects in which the preschooler thinks, learns and generally responds differently from the older child. But the significance of the   developmental characteristics of the 3 and 4-year old does not seem to have been very deeply explored by either program developers or educational researchers. While some program developers in the decade of the 60's

did try to identify the psychological precursors of academic achievement, many resorted to analyzing the components of academic tasks confronting children in first grade, and then teaching the components to the four- or even three-year-olds that were enrolled. As Kagan (n.d.) puts it, the "major criterion of existing curricula is the heavy emphasis on teaching verbal concepts and rules with minimal appreciation of the variety of concepts and rules and minimal acknowledgment that the child's developmental stage is an important determination in his ability to understand a new cognitive unit."

Only a few programs have taken a view of cognition broad enough to include attention to other than directed thinking processes. Yet it may be that, from a developmental standpoint, the fantasy and spontaneous play that characterizes this period and the opportunities provided for them may have as much bearing on later development as does instruction in directed thinking.

In this connection it is interesting to note that Vygotsky (1962), who in general, saw the necessity for instruction "marching ahead of development and leading it, being aimed not so much at the ripe as the ripening functions," considered play in the preschool period "to provide a background for changes in needs and in consciousness of a much wider nature than instruction." In this period, he believed, "play is the source of development and creates the zone of proximal development."

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kinds of knowledge emphasized in Piaget's theory bu[...]

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Progress in the Last Decade

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education needs to be broadened and put in a more c[...]

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early childhood education.

The progress made is even more striking viewed [...]

perspective. The 1947 and 1972 N.S.S.E. Yearbooks [...]

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reported in considerable detail not only how curric[...]

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in operation and in effects on the children involve[...]

noted in conclusion to her chapter on research and [...]

through it is the evidence of interrelationships [...]

environmental effects." These relationships, she added,"greatly complicate the problems of the research worker." In 1972, Messick and Barrows again comment on such relationships, but propose a methodology for dealing with them. They spell out in considerable detail, the domains in which measurement must occur if the effects of a particular intervention or program are to be adequately understood.

In some of these domains measuring instruments are already available, in others they must be developed. One hopes for caution and reflection here, for it is quite clear that many of the inadequacies of the presently available research stem from the use of instruments that were not really appropriate for the uses to which they were put.

In any event, at this point in time it is not clear whether many large scale studies, involving many children, and the manipulations of many variables, will be funded. Even if they should be, research of a rather different sort is also in order.

Within each of the measurement domains outlined by Messick and Barrows there are many questions that need to be answered. In many instances, small scale studies, perhaps replicated many times, seem in order. Furthermore, many questions cannot be adequately answered nor will whatever answers are found make any difference to early childhood education, unless ways can be found to involve both teachers and parents in the research process.

Scepticism About Research

It is no secret that educational research, and perhaps most especially, early childhood education resarch currently faces a credibility gap. Parents, particularly those in minority groups, but many others as well, are not inclined to give permission for their children to participate in any experiments. Research has no pay-off where they are concerned. They are no more sceptical than are many of today's college students. Finally, despite the fact that many of today's early childhood teachers have been involved in various sorts of research, few of them are asking for more involvement. Nor does there appear to be much evidence that whatever involvement they have had is reflected in different or more effective teaching.

In 1967, following a decade that had been noteworthy for the number of research and demonstration programs, many related to early childhood, Goodlad and Klein and a group of associates visited and observed in some one-hundred-and-fifty kindergarten and primary classrooms across the country. They sought evidence as to how the reforms implicit in the research and demonstration efforts were reflected in the classrooms. They found little. A later study of nursery schools brought equally dreary results. My own informal observations on two coasts have pinpointed some classrooms that clearly do reflect what has been going on in research and in innovative programs in the last decade. But they have not led me to believe that their effects are more widespread than Goodlad and Klein found.

The reason research has not been more effectively translated into practice may have to do with the nature of the research enterprise, and perhaps with its funding. The available research technology makes it quite possible to collect and analyze data relating to a multiplicity of variables in quantities unthinkable a decade or two ago. The data and its analysis take on a reality and meaning of their own, quite apart from the educational situations and problems they represent. The distance between the researchers and the researched widens. Perhaps it can be said that as the cognitive distance between the research and its intended consumer increases, interest in applying it decreases. One is reminded of the old story of the farmer who informed the county agent that he had no wish to try any new methods. He already knew how to farm better than he was farming.

Whether or not involvement, as a participant, not merely a subject, in research having clear relevance to the classroom or to the children, would improve practice and increase parent and teacher support for further research is, of course, an empirical question.

Reference to the "action research" that was popular in the early 1950's may provide some clues for answering this question, but circumstances then differ in many respects from those today. Today's technology, both for research and for education has advanced far beyond that of the fifties. It is paralleled by even more spectacular advances in other areas, profoundly affecting our ideology.

Leon Kass (1972), in a recent issue of Science writes, "We are witnessing the erosion, perhaps the final erosion, of the idea of man as something splendid or divine and the replacement with a view that sees man no less than nature as simply more raw material for manipulation and homogenization." Hope, he thinks, "lies only in education, in a public educated about the ways and limits of science and enlightened in its use of technology." Further he suggests that the current lack of money for research gives time to rethink and reorder our priorities.

The situation with regard to early childhood education research is not dissimilar to that Kass describes for biological research. Funding is likely to be relatively limited. We too need time to rethink and reorder our priorities keeping in mind our concern for maintaining our humanness. What are some of the steps we might be taking?

Next Steps

We have only to look at what Messick and Barrows have identified as domains of largely unmeasured variables to formulate some of the questions researchers, together with parents and teachers, might investigate.

The Child and His Family

Consider first the child and his family. There should be no need to belabor the ethnocentric assumptions in much recent early childhood research and in many programs. With increasing awareness of the stereotyping implicit in the nature of cultural deprivation, it may be possible to come to terms with the realities faced by parents in different groups and the specific nature of their strengths, their concerns and aspirations for their children as well as the specific nature of their relationships with them.

The notion of the "whole child" needs reconsideration, not as a cliché, but with a view to better understanding of the meaning of individualization. In the last decade many measures of cognition, many ways of looking at cognitive processes in young children, have been developed. Is it not time to examine more closely how such processes are reflected in the social-emotional behavior of the individual child as well as in his school tasks? Are assessment procedures to be limited to cognitive processes? What is a reasonable balance between time given to assessment, time given to instruction and time for the child to proceed on his own? Currently, at least in some parts of the country, and even as early as kindergarten as much or more time is spent in assessment as in instruction, with little if any time left for the child's autonomous investigation and learning, for him to find out who he is.

While one finds in the current literature of early childhood education, and in the research related to it, considerable emphasis on invividualization, case studies of young children revealing the nature of their individuality and its significance for their education are rarely encountered. Do we not need in the 1970's researchers who will work with parents, teachers and children to show now young Black, Chicano, Asian, Native American and other children from varying backgrounds cope with their widening world, much as Lois Murphy described Topeka children in the 1950's?

Ways also need to be found to get at the children's perceptions of what goes on in the classroom. It is too easy to assume that their performance reveals all they know or feel. How many times, for example,

have children presented a facade to the teachers such as that recently
reported by an anthropological observer (Burger, 1972). A group of
Spanish surname six-year-olds were being taught English in a behavior
modification program. They were not responding appropriately, giving
the teacher, for example, an orange when she asked for an apple. Once
the teacher left the room, however, the children with roars of laughter,
began an elaborate mimicry of the earlier task, first giving the
correct response to each object, and then chanting every possible wrong
name.

The Classroom and the Teaching

The classroom and the teaching each represent additional domains
for investigation. In recent research the curriculum model in use has
received major attention. Indeed, for a period of two or three years,
finding dimensions on which to categorize different curricula became a
preoccupation for many early childhood educators. Judging from the reports
of Gordon and of Soar in the recent N.S.S.E. Yearbook that preoccupation
has finally paid off, at least at the kindergarten and first grade levels.
Applying interaction analysis, adapted to identify both affective and
cognitive aspects and the sequences of teacher and pupil talk, to class-
rooms representing eight curriculum models, Soar was able to identify
three groups of classrooms within which the differences were not significant,
although the differences between the groups were significant. It should
be noted, however, that the variability within the classrooms representing
a single curriculum model was greater than the differences from model to
model.

The classroom processes revealed by the analysis were found to relate to the cognitive growth of the children. Greater teacher direction increased simple-concrete learning but at the expense of complex-abstract growth. Soar (1972) notes, however, that there are limits with respect to the amounts of pupil freedom, interaction and self-direction that are functional.

Soar's study, taken in conjunction with Gordon's analysis of the instructional theory underlying the various curriculum models raises a number of questions about curriculum, more about teaching.

Aside from the differing reliance they place on workbooks most of the curriculum models look surprisingly alike when seen in operation. Each has a similar array of toys, games and audio-visual equipment, plus the paint, clay, blocks, and in some instances housekeeping equipment that has been standard in the nursery school for years. Does this seemingly infinite variety of materials and equipment really enhance the children's learning? Or does it merely reflect the American propensity for conspicuous consumption? Clearly the teacher is under less pressure to intervene in the children's activities, if there are enough, or more than enough, materials to keep them busy on their own. But how do the children use the materials? What ones are essential? What is gained by adding others? Is it possible to have so many as to detract from both the social and the cognitive interaction of the children? May the teacher become so involved in the acquisition and upkeep and storage of curriculum materials as to lose sight of their essential purpose?

As Weikart (1972) has commented, the curriculum is for the teacher more than for the children. It may be useful to examine the elements of the curriculum that further the fulfillment of the teaching role as contrasted with those that may actually impede it. For it is the role of the teacher that is the major difference between curriculum models.

The Teacher's Role

None of the models assumes that the teacher is a mere bystander. The models differ, however, not only in the expected extent of the teacher's involvement with the children but more importantly in the cognitive demand that involvement places on her. Thus, Gordon's analysis of the models finds that the Engelmann-Becker model requires the least cognitive
        on the part of the teacher,
effort ∧and the EDC model the most. These extremes reflect the prevailing uncertainity as to whether the teacher is to be regarded as a professional who makes decisions, or whether, in terms of some of the current pressure for accountability, she is a piece worker who contracts to take a certain number of children through a certain number of tasks in a pre-specified time.

It is interesting to note that in some respects, particularly as far as the management of the group and of materials is concerned, the role of the teacher in the new models resembles that of the teacher in the traditional nursery school more than that of the teacher in the traditional elementary school. But, in general, the traditional nursery school

approach has not succeeded as well as the more innovative programs

when dealing with children in poverty areas. The difference, according

to Bereiter (1972) and others is that the traditional nursery school

teacher does not instruct. The "traditional approach," Bereiter says,

"does not represent a different way of teaching from those represented

in newer programs but simply represents a lower order of program, one

that is more custodial and less purposefully educational." "The true

issue," he adds, "is not how young children should be taught but

whether."

In contrast to this position, Weikart distinguishes between programs

that are custodial and those, like the traditional preschool programs

found on college campuses and originally envisioned for Head Start,

that are child centered. In these, the child initiates and the teacher

responds. When well implemented, he finds, these programs do as well for

disadvantaged children as other models. The crucial variable is the

teacher and the support she has.

Clearly, we need to know much more about the range of child initi-

ations and the variety of teacher responses to such initiations, that

is, more about the teaching process particularly at the preschool level.

Observational studies will help but are probably not sufficient. Ways

need to be found to reveal more than the teacher's responses. Are they

merely intuitive or are they guided by theoretical knowledge? It is

probably true for the preschool teacher, as Jackson (1969) reports for

the elementary teacher, that the ongoing demands of the classroom are too
intense for on-the-spot reflection. But this need not preclude an analysis
of the teacher's pre-planning in relation to what actually occurred, nor
perhaps more importantly, an analysis of her reflections on those
occurences.

Other questions need to be asked. For example, how does the
teaching done by parent participants, volunteers, para-professionals
differ from that done by the professionally trained teacher? Or does
it differ initially and then come to resemble the teacher? Insistence
that at least one member of the team needs professional training seems
reasonable. But where are the data to show what the professional does
differently from the less well trained? Are the differences important
to the child's thinking and learning or may they merely reflect cultural
differences in child rearing practices that have no necessary consequence
to the child's eventual development? Obviously questions such as these
cannot be easily or quickly answered, but it is clear that we need to
look closely and carefully at the variety of strategies adults have
for teaching the young child, and give consideration to their effects
on him,

The fact that programs for three- and four-year-olds and to an
increasing extent those for five- and six-year-olds increasingly involve
the operation of a team raises additional questions about the teacher's
role. How much of her time is spent in interaction, not with children

but with other adults, and what goes on in those interactions? What effect does this changing and expansion of the teacher's role have cn her effectiveness with children and on satisfactions she derives from it?

In the past it appeared that many individuals who elected to teach at the earliest levels, did so because they preferred working with children to working with adults. Is this true at the present time?

The researchers appear to agree that teachers differ in how well they fill the teaching role but they seem not to have asked what qualities in the teacher make for a good fit with a particular model. Would a good Engelman-Becker teacher also be a good EDC teacher and vice versa? Put another way, are self-selecting and matching processes at work, so that the teacher teaches well if the curriculum and the age period is one to which she is cognitively and emotionally well adapted?

And what if the teacher is a man? The increasing involvement of men in early childhood programs provides an excellent opportunity to examine some of the assumptions that have dominated teaching at this level. Has it been dominated by feminine conceptions and goals? Do those who are consciously aware of sex stereotyping teach differently from those who are more traditionally oriented?

The Institutional Setting

Investigation of teaching should also raise questions about another set of variables, those having to do with its institutional setting. Preschool programs are now to be found in many public schools, but they

are also affiliated with a variety of community agencies, and in some instances are relatively autonomous. Does the setting affect the teaching and the program, and in what ways? The younger the children the less amenable they are to the kinds of regulations that have come to characterize many elementary schools. Are programs in schools more constricted than those in other settings? What is the nature of the interaction between the teachers and the administration? Does the pre-kindergarten program tend to become isolated as it appears the kindergarten did earlier or is it incorporated into the totality of the school?

Evidence related to questions such as these is particularly important at this time when many people find persuasive the argument that extension of public education downward can only result in the same kind of bureaucratization that pervades elementary and secondary education.

Research and the Researcher

If bureaucracy is inherent in the public school system it is also an inevitable concomitant of large scale research. Many of the questions that I have raised here could be incorporated in a grand design, involving many schools and centers, many children and many, many teachers in many parts of the country. But we may be in a position to ask different and better questions if we first pursue some of the questions we now have in smaller ways, with the participation, not merely the cooperation, of parents and teachers. When they are involved from the beginning, helping to formulate the purposes of the research, considering the evidence to be

gathered, how it is to be validated, and how it is to be used, research should take on new meaning, not as something esoteric but as a means to the end of improved practice.

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ABSTRACT

This review of early childhood research examines what has been accomplished in the field and what questions now need to be answered. Project Head Start has had the effect of helping developmental psychology to become more comprehensive and less ethnocentric than previously. Developmental psychologists are now studying infants and toddlers and the preschool child's total functioning. Educational researchers are currently reacting to the apparent failure of public preschool programs to improve the later school achievement of disadvantaged children. The trend will probably be toward a wider range of options concerning types of early education. Developmental research in early education, involving studies of how and when particular skills and content can best be learned, is necessary to create an effective instructional program. Little research has been done on the developmental characteristics of 3- and 4-year-olds, and few instructional programs have recognized the important role fantasy and spontaneous play have in a child's cognitive development. The scope of research in early childhood education needs to be broadened and put in a more comprehensive developmental framework, although approaches are becoming increasingly sophisticated. Involvement with collecting and analyzing data has widened the distance between the researcher and the researched, and researchers should use the current period of limited funding to rethink and reorder priorities. Researchers might investigate the child and his family, the classroom and the teaching, the teacher's role, and institutional setting, and research and the researcher. (KM)

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EARLY CHILDHOOD RESEARCH: SECOND THOUGHTS AND NEXT STEPS

In the past decade the period of early childhood has received
unprecedented attention from psychologists and educators and from the
public. During these years hundreds of experimental studies and
demonstration projects have focused on the young child's development and
learning, both as an individual, and in groups. The research reports
must be weighed by the ton.

Where is all this leading us? To expanded programs of early education?
To better support for comprehensive child development programs? To more
research and development? The answers to these questions are not un-
equivocal but there is some reason to believe that the heyday of early
childhood education expansion is, if not over, at least threatened. We
may not yet have reached the "morning after" but there are indications
on all sides that a period of sober reflection is in order. The
challenges posed in articles as those by my colleague William Rohwer (1971)
in the Harvard Education Review and by Raymond Moore (1972) in a recent
issue of Harpers are real. They will not go unnoticed by either the public
or by policy makers.

In a sense both Rohwer and Moore contend that the available research
does not justify further expansion of early education, at least of a school
centered sort. Moore, particularly, urges that children possibly up to
the age of seven or eight, not be subjected to what he calls "early
schooling," unless and until research indicates that such is clearly
beneficial and in no way harmful.

My contention is that both the temper of the times and today's social realities, including changing family patterns, and the nature of much of our housing, have created an inevitable demand for early education. Many parents are in desperate need of care and education beyond that they themselves give their children. The kinds of options available to them seem to me likely to depend more on political realities than on the state of the knowledge on which such care and education might be planned.

This statement does not mean that the researchers should now abdicate their scientific roles for political roles. It does mean that the educational researcher, like the rest of his colleagues in science and technology, cannot isolate himself from the social and political context in which he works. Nor, I think, can he escape the fact that whatever practices derive from his theory and research have their social, moral and ethical consequences.

For purposes of this paper I shall try to avoid the rhetoric attendant upon an examination of the large consequences inherent in early childhood research, and look rather to what does seem to have been accomplished, and to what seem to be some of the questions that now need to be answered.

What I have to say is based mostly on impressions from reading some of the research reports and many of the review articles that have appeared recently, scanning the developmental and educational psychology journals, and the ERIC materials related to early childhood.

Early childhood research encompasses both the basic psychological research related to development and learning, and that dealing more specifically with the child in the educational setting. While the latter concern is of major consideration here, some consideration needs also to be given more basic research.

Basic Psychological Research

As Bettye Caldwell (1970) has said, the initiation of Project Head Start in 1965 gave instant status to a field (early childhood education) that had long been a step-child of both education and psychology. The politics of the time provided many psychologists the opportunity to validate certain aspects of developmental and learning theory in natural settings, such as Head Start, and more importantly in experimental programs where closer monitoring was possible.

New avenues of inquiry opened as three-, four- and five-year-olds of widely differing backgrounds became readily available for the research of psychologists who had previously worked with older children or with middle class nursery school and kindergarten youngsters. Initially, it is true, they tended to treat the cultural differences they found as deficits. Gradually, however, many have moved toward the view that learning and thinking cannot be adequately understood apart from their cultural context. Certainly, if developmental psychology is more comprehensive and less ethnocentric than a decade ago, Head Start and other innovative early childhood programs have contributed to the change.

As of now, the initial excitement over increasing intelligence and achievement by providing preschool curricula based on particular psychological theories has died down. Harder questions are being examined. The preschool child's total functioning is under closer scrutiny. Attentional and motivation factors are being examined. His play is beginning to receive serious consideration. Researchers are no longer limiting their interest to the readily accessible three- and four-year-olds but are extensively studying infants and beginning to devote attention to the toddlers. In occasional instances, psychologists are moving back and forth between the laboratory and the classroom, using the latter to validate and illuminate the findings of the former. Longitudinal studies, essential if we are to have any grasp of the ultimate effects of intervention or of different ways of child caring and education, are under way. The knowledge base on which early childhood education can be built is expanding and undergoing revision.

To some extent current early childhood education reflects this expanding knowledge base. But it also shows some lag.

Educational Research

Michael Katz in his book Class, bureaucracy and the Schools (1971) notes that the recent expansion of education downward in the attempt to improve the intellectual skills of young children was parallelled by the nineteenth century introduction of the kindergarten to improve attitudes and correct unfavorable home influences. The kindergartens, it seems, did not have to provide the scientific evidence of accomplishment that is expected from the present day programs.

After the initially promising reports from small scale experimental programs the negative findings of the Westinghouse report on Head Start, 1968, led to a "national debate" (Hellmuth, 1970) that continues. Meanwhile, what might be termed the side effects of Head Start, including such changes as the increased involvement of parents in school and community affairs, and the improved availability of health and other services have been examined (Kirschner-Associates, 1970). Follow through programs of differing kinds have been put into operation. Research designed to compare the relative effectiveness of different curriculum models is underway (Planned Variation, 1971). By the end of 1971, the available evidence from a number of evaluative and comparative studies of Head Start and other experimental programs had been reviewed several times. (See for example, Datta, 1972; McFadden, 1970; Miller, 1972; Stearns, 1971). The research problems were given major prominence in Volume 3 of the Disadvantaged Child, edited by Hellmuth, and also in the 1972 Yearbook of the National Society for the Study of Education.

Stearns (1971) in a report to the Office of Child Development, summarizes the evidence succinctly. She notes that, over the short run, public preschool programs have been successful in changing the intellectual and social behavior of disadvantaged children in positive directions. In small scale expertly staffed experimental programs, the improvements in measured intellectual abilities have been even more striking. However, after several years the children who have had the preschool experience show no advantage as far as school achievement is concerned over those who did not have it.

Reactions to the "Failure" of Early Intervention

These findings have brought forth a range of reactions on the part
of the researchers, policy makers and the public. Such reactions are, of
course, tied to the reactor s views of what is going on in other aspects
of our society, and to his theories of development and learning.
Accordingly they are more complex than are the three categories that I
am assigning them.

First, "let's abandon the effort to extend public education downward." This reaction finds support in
current studies purporting to show that schooling makes relatively little
difference in adult status and income (Bane and Jencks 1972). Such a
reaction also finds some support among those who have come to recognize
that many, if not most, of the preschool programs have been culturally
biased to a limited middle class view not only in goals and tests but
also in program content.

A second reaction is "put the responsibility for early education
back in the home where it belongs." This reaction receives support from
the finding that the most effective experimental programs have been
characterized by parental understanding of program purposes and by enlistment of
the mother as a teacher either in the classroom or the home. Research in
infancy is also called on to support this view.

A third reaction comes from those with a so-called "traditional"
nursery school view. It says, "let's take the cognitive pressure off
the preschooler and give proper attention to his social and emotional
development." This reaction goes along with the statement John Anderson

made about the content of preschool programs nearly twenty-five years ago. "It is not what the child learns in formal terms which is important, but what he gains from experiences in the way of self-control, emotional balance, initiative, interest, and enthusiasm for the material in question." Unfortunately, while it has been possible, albeit roughly, to measure cognitive gains, whatever social and emotional benefits have accrued in the experimental programs have been difficult to measure.

It seems to me unlikely that any of these reactions clearly point the direction early education, particularly that for the child between the ages of three and five is likely to take. It is true that kindergartens have only gradually been accepted as an integral part of public schooling and still have some way to go in that direction. But it is also true that, apart from the public schools, a variety of private, cooperative, and commercial ventures have made some form of early education available to many parents. An increasing number of less privileged parents have also enrolled their children in early childhood programs. From neither group, I think, is there any ground swell of opinion urging the abolition of available nursery schools, prekindergarten or kindergarten programs. Nor, I think, is there any demand that early education, whether for three-, four- or even five-year-olds should be made compulsory. But in both groups, I sense a growing conviction that a wider range of options for parents, as related to both education and care, is essential. Regardless of whether these options are provided within the public school system or are developed in the community and operated by the parents, there are any number of

persistent questions that can only be answered through research efforts.
Some of these areas of needed research require comprehensive planning,
beyond the scope of any single center, but others are more limited and could
be carried on by the staff and parents within a single center or group of
centers. We need the kind of research that helps us do a better job with children.

Strategies for Comprehensive Research

Carl Bereiter (1972), noting that, "existing technology already
enables us to teach young children far more than they can benefit from,"
suggests that what we need to do is to "construct articulated educational
programs that permit us to teach in the preschool what will be of use later
and to teach later what builds upon what was taught in the preschool."
He thinks there is little to be gained in research limited to the pre-
school level. Rather, preschool research should now be incorporated into
the programs of research at the elementary school level.

My colleague, William Rohwer (1972) takes a somewhat similar stand.
Drawing on his own research in verbal learning he proposes a strategy for
establishing how and when a particular skill or particular content can
be learned with ease. The strategy involves cumulative research using
tasks that tap a psychological process involved in school learning; applying
these tasks, which should resemble but also differ from typical school
tasks, over as wide a developemental range as possible to determine
possible developmental shifts; experimenting to find the conditions for
optimal performance at different ages and with different kinds of children.
Instruction would then be planned in accordance with the findings.

This strategy has considerable appeal, and might lead to a revolution in instruction if the array of psychological processes involved in school learning could be readily identified. Rohwer underscores his intent to search not for ways of making children precocious but for ways of assisting them to be optimally effective. Some of his work so far has led him to suggest that formal schooling might well be postponed to age seven or even later.

The Developmental Context of Instruction

The importance of developmental investigation as an inherent part of any attempt to move from the psychology of learning to a program of instruction cannot be overestimated. As Sigel (1972) has pointed out, the human organism is made up of a variety of subsystems - perceptual, cognitive, language, sensori-motor and so on. The relationships among these systems appear to differ at different stages of development and instruction related to a particular subsystem may have different effects on other subsystems at different points in time. The cumulative effects of instruction in one subsystem may also depend on the nature of the contexts for learning at succeeding stages of development.

Sheldon White (1970) has outlined the matrix of developmental changes that occur between five and seven years. His evidence, drawn from many different fields, highlights the many respects in which the preschooler thinks, learns and generally responds differently from the older child. But the significance of the developmental characteristics of the 3 and 4-year old does not seem to have been very deeply explored by either program developers or educational researchers. While some program developers in the decade of the 60's

did try to identify the psychological precursors of academic achievement, many resorted to analyzing the components of academic tasks confronting children in first grade, and then teaching the components to the four- or even three-year-olds that were enrolled. As Kagan (n.d.) puts it, the "major criterion of existing curricula is the heavy emphasis on teaching verbal concepts and rules with minimal appreciation of the variety of concepts and rules and minimal acknowledgment that the child's developmental stage is an important determination in his ability to understand a new cognitive unit."

Only a few programs have taken a view of cognition broad enough to include attention to other than directed thinking processes. Yet it may be that, from a developmental standpoint, the fantasy and spontaneous play that characterizes this period and the opportunities provided for them may have as much bearing on later development as does instruction in directed thinking.

In this connection it is interesting to note that Vygotsky (1962), who in general, saw the necessity for instruction "marching ahead of development and leading it, being aimed not so much at the ripe as the ripening functions," considered play in the preschool period "to provide a background for changes in needs and in consciousness of a much wider nature than instruction." In this period, he believed, "play is the source of development and creates the zone of proximal development."

environmental effects." These relationships, she added,"greatly complicate the problems of the research worker." In 1972, Messick and Barrows again comment on such relationships, but propose a methodology for dealing with them. They spell out in considerable detail, the domains in which measurement must occur if the effects of a particular intervention or program are to be adequately understood.

In some of these domains measuring instruments are already available, in others they must be developed. One hopes for caution and reflection here, for it is quite clear that many of the inadequacies of the presently available research stem from the use of instruments that were not really appropriate for the uses to which they were put.

In any event, at this point in time it is not clear whether many large scale studies, involving many children, and the manipulations of many variables, will be funded. Even if they should be, research of a rather different sort is also in order.

Within each of the measurement domains outlined by Messick and Barrows there are many questions that need to be answered. In many instances, small scale studies, perhaps replicated many times, seem in order. Furthermore, many questions cannot be adequately answered nor will whatever answers are found make any difference to early childhood education, unless ways can be found to involve both teachers and parents in the research process.

Scepticism About Research

It is no secret that educational research, and perhaps most especially, early childhood education resarch currently faces a credibility gap. Parents, particularly those in minority groups, but many others as well, are not inclined to give permission for their children to participate in any experiments. Research has no pay-off where they are concerned. They are no more sceptical than are many of today's college students. Finally, despite the fact that many of today's early childhood teachers have been involved in various sorts of research, few of them are asking for more involvement. Nor does there appear to be much evidence that whatever involvement they have had is reflected in different or more effective teaching.

In 1967, follow ___ade that had been noteworthy for the number of research and demonstration programs, many related to early childhood, Goodlad and Klein and a group of associates visited and observed in some one-hundred-and-fifty kindergarten and primary classrooms across the country. They sought evidence as to how the reforms implicit in the research and demonstration efforts were reflected in the classrooms. They found little. A later study of nursery schools brought equally dreary results. My own informal observations on two coasts have pinpointed some classrooms that clearly do reflect what has been going on in research and in innovative programs in the last decade. But they have not led me to believe that their effects are more widespread than Goodlad and Klein found.

The reason research has not been more effectively translated into practice may have to do with the nature of the research enterprise, and perhaps with its funding. The available research technology makes it quite possible to collect and analyze data relating to a multiplicity of variables in quantities unthinkable a decade or two ago. The data and its analysis take on a reality and meaning of their own, quite apart from the educational situations and problems they represent. The distance between the researchers and the researched widens. Perhaps it can be said that as the cognitive distance between the research and its intended consumer increases, interest in applying it decreases. One is reminded of the old story of the farmer who informed the county agent that he had no wish to try any new methods. He already knew how to farm better than he was farming.

Whether or not involvement, as a participant, not merely a subject, in research having clear relevance to the classroom or to the children, would improve practice and increase parent and teacher support for further research is, of course, an empirical question.

Reference to the "action research" that was popular in the early 1950's may provide some clues for answering this question, but circumstances then differ in many respects from those today. Today's technology, both for research and for education has advanced far beyond that of the fifties. It is paralleled by even more spectacular advances in other areas, profoundly affecting ur ideology.

Leon Kass (1972), in a recent issue of Science writes, "We are witnessing the erosion, perhaps the final erosion, of the idea of man as something splendid or divine and the replacement with a view that sees man no less than nature as simply more raw material for manipulation and homogenization." Hope, he thinks, "lies only in education, in a public educated about the ways and limits of science and enlightened in its use of technology." Further he suggests that the current lack of money for research gives time to rethink and reorder our priorities.

The situation with regard to early childhood education research is not dissimilar to that Kass describes for biological research. Funding is likely to be relatively limited. We too need time to rethink and reorder our priorities keeping in mind our concern for maintaining our humanness. What are some of the steps we might be taking?

Next Steps

We have only to look at what Messick and Barrows have identified as domains of largely unmeasured variables to formulate some of the questions researchers, together with parents and teachers, might investigate.

The Child and His Family

Consider first the child and his family. There should be no need to belabor the ethnocentric assumptions in much recent early childhood research and in many programs. With increasing awareness of the stereo-typing implicit in the nature of cultural deprivation, it may be possible to come to terms with the realities faced by parents in different groups and the specific nature of their strengths, their concerns and aspirations for their children as well as the specific nature of their relationships with them.

The notion of the "whole child" needs reconsideration, not as a cliché,
but with a view to better understanding of the meaning of individualization.
In the last decade many measures of cognition, many ways of looking at
cognitive processes in young children, have been developed. Is it not
time to examine more closely how such processes are reflected in the
social-emotional behavior of the individual child as well as in his
.chool tasks?   Are assessment procedures to be limited to cognitive
processes? What is a reasonable balance between time given to assessment,
time given to instruction and time for the child to proceed on his own?
Currently, at least in some parts of the country, and even as early as
kindergarten as much or more time is spent in assessment as in instruction,
with little if any time left for the child's autonomous investigation and
learning, for him to find out who he is.

While one finds in the current literature of early childhood education,
and in the research related to it, considerable emphasis on invividualization,
case studies of young children revealing the nature of their individuality
and its significance for their education are rarely encountered. Do we
not need in the 1970's researchers who will work with parents, teachers
and children to show now young Black, Chicano, Asian, Native American and
other children from varying backgrounds cope with their widening world,
much as Lois Murphy described Topeka children in the 1950's?

Ways also need to be found to get at the children's perceptions
of what goes on in the classroom. It is too easy to assume that their
performance reveals all they know or feel. How many times, for example,

have children presented a facade to the teachers such as that recently

reported by an anthropological observer (Burger, 1972). A group of

Spanish surname six-year-olds were being taught English in a behavior

modification program. They were not responding appropriately, giving

the teacher, for example, an orange when she asked for an apple. Once

the teacher left the room, however, the children with roars of laughter,

began an elaborate mimicry of the earlier task, first giving the

correct response to each object, and then chanting every possible wrong

name.

The Classroom and the Teaching

The classroom and the teaching each represent additional domains

for investigation. In recent research the curriculum model in use has

received major attention. Indeed, for a period of two or three years,

finding dimensions on which to categorize different curricula became a

preoccupation for many early childhood educators. Judging from the reports

of Gordon and of Soar in the recent N.S.S.E. Yearbook that preoccupation

has finally paid off, at least at the kindergarten and first grade levels.

Applying interaction analysis, adapted to identify both affective and

cognitive aspects and the sequences of teacher and pupil talk, to class-

rooms representing eight curriculum models, Soar was able to identify

three groups of classrooms within which the differences were not significant,

although the differences between the groups were significant. It should

be noted, however, that the variability within the classrooms representing

a single curriculum model was greater than the differences from model to

model.

The classroom processes revealed by the analysis were found to relate to the cognitive growth of the children. Greater teacher direction increased simple-concrete learning but at the expense of complex-abstract growth. Soar (1972) notes, however, that there are limits with respect to the amounts of pupil freedom, interaction and self-direction that are functional.

Soar's study, taken in conjunction with Gordon's analysis of the instructional theory underlying the various curriculum models raises a number of questions about curriculum, more about teaching.

Aside from the differing reliance they place on workbooks most of the curriculum models look surprisingly alike when seen in operation. Each has a similar array of toys, games and audio-visual equipment, plus the paint, clay, blocks, and in some instances housekeeping equipment that has been standard in the nursery school for years. Does this seemingly infinite variety of materials and equipment really enhance the children's learning? Or does it merely reflect the American propensity for conspicuous consumption? Clearly the teacher is under less pressure to intervene in the children's activities, if there are enough, or more than enough, materials to keep them busy on their own. But how do the children use the materials? What ones are essential? What is gained by adding others? Is it possible to have so many as to detract from both the social and the cognitive interaction of the children? May the teacher become so involved in the acquisition and upkeep and storage of curriculum materials as to lose sight of their essential purpose?

As Weikart (1972) has commented, the curriculum is for the teacher more than for the children. It may be useful to examine the elements of the curriculum that further the fulfillment of the teaching role as contrasted with those that may actually impede it. For it is the role of the teacher that is the major difference between curriculum models.

The Teacher's Role

None of the models assumes that the teacher is a mere bystander. The models differ, however, not only in the expected extent of the teacher's involvement with the children but more importantly in the cognitive demand that involvement places on her. Thus, Gordon's analysis of the models finds that the Engelmann-Becker model requires the least cognitive
     on the part of the teacher,
effort ∧and the EDC model the most. These extremes reflect the prevailing uncertainity as to whether the teacher is to be regarded as a professional who makes decisions, or whether, in terms of some of the current pressure for accountability, she is a piece worker who contracts to take a certain number of children through a certain number of tasks in a pre-specified time.

It is interesting to note that in some respects, particularly as far as the management of the group and of materials is concerned, the role of the teacher in the new models resembles that of the teacher in the traditional nursery school more than that of the teacher in the traditional elementary school. But, in general, the traditional nursery school

approach has not succeeded as well as the more innovative programs

when dealing with children in poverty areas. The difference, according

to Bereiter (1972) and others is that the traditional nursery school

teacher does not instruct. The "traditional approach," Bereiter says,

"does not represent a different way of teaching from those represented

in newer programs but simply represents a lower order of program, one

that is more custodial and less purposefully educational." "The true

issue," he adds, "is not how young children should be taught but

whether."

In contrast to this position, Weikart distinguishes between programs

that are custodial and those, like the traditional preschool programs

found on college campuses and originally envisioned for Head Start,

that are child centered. In these, the child initiates and the teacher

responds. When well implemented, he finds, these programs do as well for

disadvantaged children as other models. The crucial variable is the

teacher and the support she has.

Clearly, we need to know much more about the range of child initi-

ations and the variety of teacher responses to such initiations, that

is, more about the teaching process particularly at the preschool level.

Observational studies will help but are probably not sufficient. Ways

need to be found to reveal more than the teacher's responses. Are they

merely intuitive or are they guided by theoretical knowledge? It is

probably true for the preschool teacher, as Jackson (1969) reports for

the elementary teacher, that the ongoing demands of the classroom are too

intense for on-the-spot reflection. But this need not preclude an analysis

of the teacher's pre-planning in relation to what actually occurred, nor

perhaps more importantly, an analysis of her reflections on those

occurences.

Other questions need to be asked. For example, how does the

teaching done by parent participants, volunteers, para-professionals

differ from that done by the professionally trained teacher? Or does

it differ initially and then come to resemble the teacher? Insistence

that at least one member of the team needs professional training seems

reasonable. But where are the data to show what the professional does

differently from the less well trained? Are the differences important

to the child's thinking and learning or may they merely reflect cultural

differences in child rearing practices that have no necessary consequence

to the child's eventual development? Obviously questions such as these

cannot be easily or quickly answered, but it is clear that we need to

look closely and carefully at the variety of strategies adults have

for teaching the young child, and give consideration to their effects

on him,

The fact that programs for three- and four-year-olds and to an

increasing extent those for five- and six-year-olds increasingly involve

the operation of a team raises additional questions about the teacher's

role. How much of her time is spent in interaction, not with children

but with other adults, and what goes on in those interactions? What

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In the past it appeared that many individuals who elected to

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Would a good Engelman-Becker teacher also be a good EDC teacher and

vice versa? Put another way, are self-selecting and matching processes

at work, so that the teacher teaches well if the curriculum and the age

period is one to which she is cognitively and emotionally well adapted?

And what if the teacher is a man? The increasing involvement of

men in early childhood programs provides an excellent opportunity to

examine some of the assumptions that have dominated teaching at this

level. Has it been dominated by feminine conceptions and goals? Do

those who are consciously aware of sex stereotyping teach differently from

those who are more traditionally oriented?

The Institutional Setting

Investigation of teaching should also raise questions about another

set of variables, those having to do with its institutional setting.

Preschool programs are now to be found in many public schools, but they

are also affiliated with a variety of community agencies, and in some instances are relatively autonomous. Does the setting affect the teaching and the program, and in what ways? The younger the children the less amenable they are to the kinds of regulations that have come to characterize many elementary schools. Are programs in schools more constricted than those in other settings? What is the nature of the interaction between the teachers and the administration? Does the pre-kindergarten program tend to become isolated as it appears the kindergarten did earlier or is it incorporated into the totality of the school?

Evidence related to questions such as these is particularly important at this time when many people find persuasive the argument that extension of public education downward can only result in the same kind of bureaucratization that pervades elementary and secondary education.

Research and the Researcher

If bureaucracy is inherent in the public school system it is also an inevitable concomitant of large scale research. Many of the questions that I have raised here could be incorporated in a grand design, involving many schools and centers, many children and many, many teachers in many parts of the country. But we may be in a position to ask different and better questions if we first pursue some of the questions we now have in smaller ways, with the participation, not merely the cooperation, of parents and teachers. When they are involved from the beginning, helping to formulate the purposes of the research, considering the evidence to be

gathered, how it is to be validated, and how it is to be used, research

should take on new meaning, now as something esoteric but as a means to

the end of improved practice.

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ABSTRACT
        This review of early childhood research examines what
has been accomplished in the field and what questions now need to be
answered. Project Head Start has had the effect of helping
developmental psychology to become more comprehensive and less
ethnocentric than previously. Developmental psychologists are now
studying infants and toddlers and the preschool child's total
functioning. Educational researchers are currently reacting to the
apparent failure of public preschool programs to improve the later
school achievement of disadvantaged children. The trend will probably
be toward a wider range of options concerning types of early
education. Developmental research in early education, involving
studies of how and when particular skills and content can best be
learned, is necessary to create an effective instructional program.
Little research has been done on the developmental characteristics of
3- and 4-year-olds, and few instructional programs have recognized
the important role fantasy and spontaneous play have in a child's
cognitive development. The scope of research in early childhood
education needs to be broadened and put in a more comprehensive
developmental framework, although approaches are becoming
increasingly sophisticated. Involvement with collecting and analyzing
data has widened the distance between the researcher and the
researched, and researchers should use the current period of limited
funding to rethink and reorder priorities. Researchers might
investigate the child and his family, the classroom and the teaching,
the teacher's role, and institutional setting, and research and the
researcher. (KM)

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EARLY CHILDHOOD RESEARCH: SECOND THOUGHTS AND NEXT STEPS

In the past decade the period of early childhood has received
unprecedented attention from psychologists and educators and from the
public. During these years hundreds of experimental studies and
demonstration projects have focused on the young child's development and
learning, both as an individual, and in groups. The research reports
must be weighed by the ton.

Where is all this leading us? To expanded programs of early education?
To better support for comprehensive child development programs? To more
research and development? The answers to these questions are not un-
equivocal but there is some reason to believe that the heyday of early
childhood education expansion is, if not over, at least threatened. We
may not yet have reached the "morning after" but there are indications
on all sides that a period of sober reflection is in order. The
challenges posed in articles as those by my colleague William Rohwer (1971)
in the Harvard Education Review and by Raymond Moore (1972) in a recent
issue of Harpers are real. They will not go unnoticed by either the public
or by policy makers.

In a sense both Rohwer and Moore contend that the available research
does not justify further expansion of early education, at least of a school
centered sort. Moore, particularly, urges that children possibly up to
the age of seven or eight, not be subjected to what he calls "early
schooling," unless and until research indicates that such is clearly
beneficial and in no way harmful.

My contention *. that both the temper of the times and today's social
realities, including changing family patterns, and the nature of much of our
housing, have created an inevitable demand for early education. Many
parents are in desperate need of care and education beyond that they them-
selves give their children. The kinds of options available to them seem
to me likely to depend more on political realities than on the state of
the knowledge on which such care and education might be planned.

This statement does not mean that the researchers should now abdicate
their scientific roles for political roles. It does mean that the
educational researcher, like the rest of his colleagues in science and
technology, cannot isolate himself from the social and political context
in which he works. Nor, I think, can he escape the fact that whatever
practices derive from his theory and research have their social, moral
and ethical consequences.

For purposes of this paper I shall try to avoid the rhetoric
attendant upon an examination of the large consequences inherent in
early childhood research, and look rather to what does seem to have
been accomplished, and to what seem to be some of the questions that now
need to be answered.

What I have to say is based mostly on impressions from reading some
of the research reports and many of the review articles that have appeared
recently, scanning the developmental and educational psychology
journals, and the ERIC materials related to early childhood.

Early childhood research encompasses both the basic psychological research related to development and learning, and that dealing more specifically with the child in the educational setting. While the latter concern is of major consideration here, some consideration needs also to be given more basic research.

Basic Psychological Research

As Bettye Caldwell (1970) has said, the initiation of Project Head Start in 1965 gave instant status to a field (early childhood education) that had long been a step-child of both education and psychology. The politics of the time provided many psychologists the opportunity to validate certain aspects of developmental and learning theory in natural settings, such as Head Start, and more importantly in experimental programs where closer monitoring was possible.

New avenues of inquiry opened as three-, four- and five-year-olds of widely differing backgrounds became readily available for the research of psychologists who had previously worked with older children or with middle class nursery school and kindergarten youngsters. Initially, it is true, they tended to treat the cultural differences they found as deficits. Gradually, however, many have moved toward the view that learning and thinking cannot be adequately understood apart from their cultural context. Certainly, if developmental psychology is more comprehensive and less ethnocentric than a decade ago, Head Start and other innovative early childhood programs have contributed to the change.

As of now, the initial excitement over increasing intelligence and achievement by providing preschool curricula based on particular psychological theories has died down. Harder questions are being examined. The preschool child's total functioning is under closer scrutiny.   Attentional and motivation factors are being examined. His play is beginning to receive serious consideration. Researchers are no longer limiting their interest to the readily accessible three- and four-year-olds but are extensively studying infants and beginning to devote attention to the toddlers.   In occasional instances, psychologists are moving back and forth between the laboratory and the classroom, using the latter to validate and illuminate the findings of the former. Longitudinal studies, essential if we are to have any grasp of the ultimate effects of intervention or of different ways of child caring and education, are under way.   The knowledge base on which early childhood education can be built is expanding and undergoing revision.

To some extent current early childhood education reflects this expanding knowledge base. But it also shows some lag.

Educational Research   .

Michael Katz in his book <u>Class, Bureaucracy and the Schools</u> (1971) notes that the recent expansion of education downward in the attempt to
                                  of young children
improve the intellectual skills was parallelled by the nineteenth century introduction of the kindergarten to improve attitudes and correct un- favorable home influences. The kindergartens, it seems, did not have to provide the scientific evidence of accomplishment that is expected from the present day programs.

After the initially promising reports from small scale experimental programs the negative findings of the Westinghouse report on Head Start, 1968, led to a "national debate" (Hellmuth, 1970) that continues. Meanwhile, what might be termed the side effects of Head Start, including such changes as the increased involvement of parents in school and community affairs, and the improved availability of health and other services have been examined (Kirschner-Associates, 1970). Follow through programs of differing kinds have been put into operation. Research designed to compare the relative effectiveness of different curriculum models is underway (Planned Variation, 1971). By the end of 1971, the available evidence from a number of evaluative and comparative studies of Head Start and other experimental programs had been reviewed several times. (See for example, Datta, 1972; McFadden, 1970; Miller, 1972; Stearns, 1971). The research problems were given major prominence in Volume 3 of the Disadvantaged Child, edited by Hellmuth, and also in the 1972 Yearbook of the National Society for the Study of Education.

Stearns (1971) in a report to the Office of Child Development, summarizes the evidence succinctly. She notes that, over the short run, public preschool programs have been successful in changing the intellectual and social behavior of disadvantaged children in positive directions. In small scale expertly staffed experimental programs, the improvements in measured intellectual abilities have been even more striking. However, after several years the children who have had the preschool experience show no advantage as far as school achievement is concerned over those who did not have it.

Reactions to the "Failure" of Early Intervention

These findings have brought forth a range of reactions on the part
of the researchers, policy makers and the public. Such reactions are, of
course, tied to the reactor's views of what is going on in other aspects
of our society, and to his theories of development and learning.
Accordingly they are more complex than are the three categories that I
am assigning them.

First, "let's abandon the effort to extend public education downward." This reaction finds support in
current studies purporting to show that schooling makes relatively little
difference in adult status and income (Bane and Jencks 1972). Such a
reaction also finds some support among those who have come to recognize
that many, if not most, of the preschool programs have been culturally
biased to a limited middle class view not only in goals and tests but
also in program content.

A second reaction is "put the responsibility for early education
back in the home where it belongs." This reaction receives support from
the finding that the most effective experimental programs have been
characterized by parental understanding of program purposes and by enlistment of
the mother as a teacher either in the classroom or the home. Research in
infancy is also called on to support this view.

A third reaction comes from those with a so-called "traditional"
nursery school view. It says, "let's take the cognitive pressure off
the preschooler and give proper attention to his social and emotional
development." This reaction goes along with the statement John Anderson

made about the content of preschool programs nearly twenty-five years ago. "It is not what the child learns in formal terms which is important, but what he gains from experiences in the way of self-control, emotional balance, initiative, interest, and enthusiasm for the material in question." Unfortunately, while it has been possible, albeit roughly, to measure cognitive gains, whatever social and emotional benefits have accrued in the experimental programs have been difficult to measure.

It seems to me unlikely that any of these reactions clearly point the direction early education, particularly that for the child between the ages of three and five is likely to take. It is true that kindergartens have only gradually been accepted as an integral part of public schooling and still have some way to go in that direction. But it is also true that, apart from the public schools, a variety of private, cooperative, and commercial ventures have made some form of early education available to many parents. An increasing number of less privileged parents have also enrolled their children in early childhood programs. From neither group, I think, is there any ground swell of opinion urging the abolition of available nursery schools, prekindergarten or kindergarten programs. Nor, I think, is there any demand that early education, whether for three-, four- or even five-year-olds should be made compulsory. But in both groups, I sense a growing conviction that a wider range of options for parents, as related to both education and care, is essential. Regardless of whether these options are provided within the public school system or are developed in the community and operated by the parents, there are any number of

persistent questions that can only be answered through research efforts.
Some of these areas of needed research require comprehensive planning,
beyond the scope of any single center, but others are more limited and could
be carried on by the staff and parents within a single center or group of
centers. We need the kind of research that helps us do a better job with children.

Strategies for Comprehensive Research

Carl Bereiter (1972), noting that, "existing technology already
enables us to teach young children far more than they can benefit from,"
suggests that what we need to do is to "construct articulated educational
programs that permit us to teach in the preschool what will be of use later
and to teach later what builds upon what was taught in the preschool."
He thinks there is little to be gained in research limited to the pre-
school level. Rather, preschool research should now be incorporated into
the programs of research at the elementary school level.   .

My colleague, William Rohwer (1972) takes a somewhat similar stand.
Drawing on his own research in verbal learning he proposes a strategy for
establishing how and when a particular skill or particular content can
be learned with ease. The strategy involves cumulative research using
tasks that tap a psychological process involved in school learning; applying
these tasks, which should resemble but also differ from typical school
tasks, over as wide a developemental range as possible to determine
possible developmental shifts; experimenting to find the conditions for
optimal performance at different ages and with different kinds of children.
Instruction would then be planned in accordance with the findings.

This strategy has considerable appeal, and might lead to a revolution in instruction if the array of psychological processes involved in school learning could be readily identified. Rohwer underscores his intent to search not for ways of making children precocious but for ways of assisting them to be optimally effective. Some of his work so far has led him to suggest that formal schooling might well be postponed to age seven or even later.

The Developmental Context of Instruction

The importance of developmental investigation as an inherent part of any attempt to move from the psychology of learning to a program of instruction cannot be overestimated. As Sigel (1972) has pointed out, the human organism is made up of a variety of subsystems - perceptual, cognitive, language, sensori-motor and so on. The relationships among these systems appear to differ at different stages of development and instruction related to a particular subsystem may have different effects on other subsystems at different points in time. The cumulative effects of instruction in one subsystem may also depend on the nature of the contexts for learning at succeeding stages of development.

Sheldon White (1970) has outlined the matrix of developmental changes that occur between five and seven years. His evidence, drawn from many different fields, highlights the many respects in which the preschooler thinks, learns and generally responds differently from the older child. But the significance of the   developmental characteristics of the 3 and 4-year old does not seem to have been very deeply explored by either program developers or educational researchers. While some program developers in the decade of the 60's

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environmental effects." These relationships, she added,"greatly complicate

the problems of the research worker." In 1972, Messick and Barrows again

comment on such relationships, but propose a methodology for dealing with

them. They spell out in considerable detail, the domains in which measure-

ment must occur if the effects of a particular intervention or program are

to be adequately understood.

In some of these domains measuring instruments are already available,

in others they must be developed. One hopes for caution and reflection

here, for it is quite clear that many of the inadequacies of the presently

available research stem from the use of instruments that were not really

appropriate for the uses to which they were put.

In any event, at this point in time it is not clear whether many

large scale studies, involving many children, and the manipulations of

many variables, will be funded. Even if they should be, research of a

rather different sort is also in order.

Within each of the measurement domains outlined by Messick and

Barrows there are many questions that need to be answered. In many

instances, small scale studies, perhaps replicated many times, seem in

order. Furthermore, many questions cannot be adequately answered nor will

whatever answers are found make any difference to early childhood

education, unless ways can be found to involve both teachers and parents

in the research process.

Scepticism About Research

It is no secret that educational research, and perhaps most especially, early childhood education resarch currently faces a credibility gap. Parents, particularly those in minority groups, but many others as well, are not inclined to give permission for their children to participate in any experiments. Research has no pay-off where they are concerned. They are no more sceptical than are many of today's college students. Finally, despite the fact that many of today's early childhood teachers have been involved in various sorts of research, few of them are asking for more involvement. Nor does there appear to be much evidence that whatever involvement they have had is reflected in different or more effective teaching.

In 1967, following a decade that had been noteworthy for the number of research and demonstration programs, many related to early childhood, Goodlad and Klein and a group of associates visited and observed in some one-hundred-and-fifty kindergarten and primary classrooms across the country. They sought evidence as to how the reforms implicit in the research and demonstration efforts were reflected in the classrooms. They found little. A later study of nursery schools brought equally dreary results. My own informal observations on two coasts have pinpointed some classrooms that clearly do reflect what has been going on in research and in innovative programs in the last decade. But they have not led me to believe that their effects are more widespread than Goodlad and Klein found.

The reason research has not been more effectively translated into practice may have to do with the nature of the research enterprise, and perhaps with its funding. The available research technology makes it quite possible to collect and analyze data relating to a multiplicity of variables in quantities unthinkable a decade or two ago. The data and its analysis take on a reality and meaning of their own, quite apart from the educational situations and problems they represent. The distance between the researchers and the researched widens. Perhaps it can be said that as the cognitive distance between the research and its intended consumer increases, interest in applying it decreases. One is reminded of the old story of the farmer who informed the county agent that he had no wish to try any new methods. He already knew how to farm better than he was farming.

Whether or not involvement, as a participant, not merely a subject, in research having clear relevance to the classroom or to the children, would improve practice and increase parent and teacher support for further research is, of course, an empirical question.

Reference to the "action research" that was popular in the early 1950's may provide some clues for answering this question, but circumstances then differ in many respects from those today. Today's technology, both for research and for education has advanced far beyond that of the fifties. It is paralleled by even more spectacular advances in other areas, profoundly affecting our ideology.

Leon Kass (1972), in a recent issue of Science writes, "We are witnessing the erosion, perhaps the final erosion, of the idea of man as something splendid or divine and the replacement with a view that sees man no less than nature as simply more raw material for manipulation and homogenization." Hope, he thinks, "lies only in education, in a public educated about the ways and limits of science and enlightened in its use of technology." Further he suggests that the current lack of money for research gives time to rethink and reorder our priorities.

The situation with regard to early childhood education research is not dissimilar to that Kass describes for biological research. Funding is likely to be relatively limited. We too need time to rethink and reorder our priorities keeping in mind our concern for maintaining our humanness. What are some of the steps we might be taking?

Next Steps

We have only to look at what Messick and Barrows have identified as domains of largely unmeasured variables to formulate some of the questions researchers, together with parents and teachers, might investigate.

The Child and His Family

Consider first the child and his family. There should be no need to belabor the ethnocentric assumptions in much recent early childhood research and in many programs. With increasing awareness of the stereo-typing implicit in the nature of cultural deprivation, it may be possible to come to terms with the realities faced by parents in different groups and the specific nature of their strengths, their concerns and aspirations for their children as well as the specific nature of their relationships with them.

The notion of the "whole child" needs reconsideration, not as a cliché,
but with a view to better understanding of the meaning of individualization.
In the last decade many measures of cognition, many ways of looking at
cognitive processes in young children, have been developed. Is it not
time to examine more closely how such processes are reflected in the
social-emotional behavior of the individual child as well as in his
.chool tasks?   Are assessment procedures to be limited to cognitive
processes? What is a reasonable balance between time given to assessment,
time given to instruction and time for the child to proceed on his own?
Currently, at least in some parts of the country, and even as early as
kindergarten as much or more time is spent in assessment as in instruction,
with little if any time left for the child's autonomous investigation and
learning, for him to find out who he is.

While one finds in the current literature of early childhood education,
and in the research related to it, considerable emphasis on invividualization,
case studies of young children revealing the nature of their individuality
and its significance for their education are rarely encountered. Do we
not need in the 1970's researchers who will work with parents, teachers
and children to show now young Black, Chicano, Asian, Native American and
other children from varying backgrounds cope with their widening world,
much as Lois Murphy described Topeka children in the 1950's?

Ways also need to be found to get at the children's perceptions
of what goes on in the classroom. It is too easy to assume that their
performance reveals all they know or feel. How many times, for example,

have children presented a facade to the teachers such as that recently reported by an anthropological observer (Burger, 1972). A group of Spanish surname six-year-olds were being taught English in a behavior modification program. They were not responding appropriately, giving the teacher, for example, an orange when she asked for an apple. Once the teacher left the room, however, the children with roars of laughter, began an elaborate mimicry of the earlier task, first giving the correct response to each object, and then chanting every possible wrong name.

The Classroom and the Teaching

The classroom and the teaching each represent additional domains for investigation. In recent research the curriculum model in use has received major attention. Indeed, for a period of two or three years, finding dimensions on which to categorize different curricula became a preoccupation for many early childhood educators. Judging from the reports of Gordon and of Soar in the recent N.S.S.E. Yearbook that preoccupation has finally paid off, at least at the kindergarten and first grade levels. Applying interaction analysis, adapted to identify both affective and cognitive aspects and the sequences of teacher and pupil talk, to classrooms representing eight curriculum models, Soar was able to identify three groups of classrooms within which the differences were not significant, although the differences between the groups were significant. It should be noted, however, that the variability within the classrooms representing a single curriculum model was greater than the differences from model to model.

The classroom processes revealed by the analysis were found to relate to the cognitive growth of the children. Greater teacher direction increased simple-concrete learning but at the expense of complex-abstract growth. Soar (1972) notes, however, that there are limits with respect to the amounts of pupil freedom, interaction and self-direction that are functional.

Soar's study, taken in conjunction with Gordon's analysis of the instructional theory underlying the various curriculum models raises a number of questions about curriculum, more about teaching.

Aside from the differing reliance they place on workbooks most of the curriculum models look surprisingly alike when seen in operation. Each has a similar array of toys, games and audio-visual equipment, plus the paint, clay, blocks, and in some instances housekeeping equipment that has been standard in the nursery school for years. Does this seemingly infinite variety of materials and equipment really enhance the children's learning? Or does it merely reflect the American propensity for conspicuous consumption? Clearly the teacher is under less pressure to intervene in the children's activities, if there are enough, or more than enough, materials to keep them busy on their own. But how do the children use the materials? What ones are essential? What is gained by adding others? Is it possible to have so many as to detract from both the social and the cognitive interaction of the children? May the teacher become so involved in the acquisition and upkeep and storage of curriculum materials as to lose sight of their essential purpose?

As Weikart (1972) has commented, the curriculum is for the teacher

more than for the children. It may be useful to examine the elements of

the curriculum that further the fulfillment of the teaching role as

contrasted with those that may actually impede it. For it is the role of

the teacher that is the major difference between curriculum models.

The Teacher's Role

None of the models assumes that the teacher is a mere bystander.

The models differ, however, not only in the expected extent of the teacher's

involvement with the children but more importantly in the cognitive demand

that involvement places on her. Thus, Gordon's analysis of the models

finds that the Engelmann-Becker model requires the least cognitive
        on the part of the teacher,
effort ∧and the EDC model the most. These extremes reflect the prevailing

uncertainity as to whether the teacher is to be regarded as a professional

who makes decisions, or whether, in terms of some of the current pressure

for accountability, she is a piece worker who contracts to take a certain

number of children through a certain number of tasks in a pre-specified

time.

It is interesting to note that in some respects, particularly as far

as the management of the group and of materials is concerned, the role of

the teacher in the new models resembles that of the teacher in the

traditional nursery school more than that of the teacher in the traditional

elementary school. But, in general, the traditional nursery school

approach has not succeeded as well as the more innovative programs
when dealing with children in poverty areas. The difference, according
to Bereiter (1972) and others is that the traditional nursery school
teacher does not instruct. The "traditional approach," Bereiter says,
"does not represent a different way of teaching from those represented
in newer programs but simply represents a lower order of program, one
that is more custodial and less purposefully educational." "The true
issue," he adds, "is not how young children should be taught but
whether."

In contrast to this position, Weikart distinguishes between programs
that are custodial and those, like the traditional preschool programs
found on college campuses and originally envisioned for Head Start,
that are child centered. In these, the child initiates and the teacher
responds. When well implemented, he finds, these programs do as well for
disadvantaged children as other models. The crucial variable is the
teacher and the support she has.

Clearly, we need to know much more about the range of child initi-
ations and the variety of teacher responses to such initiations, that
is, more about the teaching process particularly at the preschool level.
Observational studies will help but are probably not sufficient. Ways
need to be found to reveal more than the teacher's responses. Are they
merely intuitive or are they guided by theoretical knowledge? It is
probably true for the preschool teacher, as Jackson (1969) reports for

the elementary teacher, that the ongoing demands of the classroom are too
intense for on-the-spot reflection. But this need not preclude an analysis
of the teacher's pre-planning in relation to what actually occurred, nor
perhaps more importantly, an analysis of her reflections on those
occurences.

Other questions need to be asked. For example, how does the
teaching done by parent participants, volunteers, para-professionals
differ from that done by the professionally trained teacher? Or does
it dif er initially and then come to resemble the teacher? Insistence
that at least one member of the team needs professional training seems
reasonable. But where are the data to show what the professional does
differently from the less well trained? Are the differences important
to the child's thinking and learning or may they merely reflect cultural
differences in child rearing practices that have no necessary consequence
to the child's eventual development? Obviously questions such as these
cannot be easily or quickly answered, but it is clear that we need to
look closely and carefully at the variety of strategies adults have
for teaching the young child, and give consideration to their effects
on him,

The fact that programs for three- and four-year-olds and to an
increasing extent those for five- and six-year-olds increasingly involve
the operation of a team raises additional questions about the teacher's
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Would a good Engelman-Becker teacher also be a good EDC teacher and

vice versa? Put another way, are self-selecting and matching processes

at work, so that the teacher teaches well if the curriculum and the age

period is one to which she is cognitively and emotionally well adapted?

And what if the teacher is a man? The increasing involvement of

men in early childhood programs provides an excellent opportunity to

examine some of the assumptions that have dominated teaching at this

level. Has it been dominated by feminine conceptions and goals? Do

those who are consciously aware of sex stereotyping teach differently from

those who are more traditionally oriented?

The Institutional Setting

Investigation of teaching should also raise questions about another

set of variables, those having to do with its institutional setting.

Preschool programs are now to be found in many public schools, but they

are also affiliated with a variety of community agencies, and in some instances are relatively autonomous. Does the setting affect the teaching and the program, and in what ways? The younger the children the less amenable they are to the kinds of regulations that have come to characterize many elementary schools. Are programs in schools more constricted than those in other settings? What is the nature of the interaction between the teachers and the administration? Does the pre-kindergarten program tend to become isolated as it appears the kindergarten did earlier or is it incorporated into the totality of the school?

Evidence related to questions such as these is particularly important at this time when many people find persuasive the argument that extension of public education downward can only result in the same kind of bureaucratization that pervades elementary and secondary education.

Research and the Researcher

If bureaucracy is inherent in the public school system it is also an inevitable concomitant of large scale research. Many of the questions that I have raised here could be incorporated in a grand design, involving many schools and centers, many children and many, many teachers in many parts of the country. But we may be in a position to ask different and better questions if we first pursue some of the questions we now have in smaller ways, with the participation, not merely the cooperation, of parents and teachers. When they are involved from the beginning, helping to formulate the purposes of the research, considering the evidence to be

gathered, how it is to be va

should take on new meaning,

the end of improved practice

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ABSTRACT
                This review of early childhood research examines what
has been accomplished in the field and what questions now need to be
answered. Project Head Start has had the effect of helping
developmental psychology to become more comprehensive and less
ethnocentric than previously. Developmental psychologists are now
studying infants and toddlers and the preschool child's total
functioning. Educational researchers are currently reacting to the
apparent failure of public preschool programs to improve the later
school achievement of disadvantaged children. The trend will probably
be toward a wider range of options concerning types of early
education. Developmental research in early education, involving
studies of how and when particular skills and content can best be
learned, is necessary to create an effective instructional program.
Little research has been done on the developmental characteristics of
3- and 4-year-olds, and few instructional programs have recognized
the important role fantasy and spontaneous play have in a child's
cognitive development. The scope of research in early childhood
education needs to be broadened and put in a more comprehensive
developmental framework, although approaches are becoming
increasingly sophisticated. Involvement with collecting and analyzing
data has widened the distance between the researcher and the
researched, and researchers should use the current period of limited
funding to rethink and reorder priorities. Researchers might
investigate the child and his family, the classroom and the teaching,
the teacher's role, and institutional setting, and research and the
researcher. (KM)

Almy

EARLY CHILDHOOD RESEARCH: SECOND THOUGHTS AND NEXT STEPS

In the past decade the period of early childhood has received
unprecedented attention from psychologists and educators and from the
public.   During these years hundreds of experimental studies and
demonstration projects have focused on the young child's development and
learning, both as an individual, and in groups.   The research reports
must be weighed by the ton.

Where is all this leading us?   To expanded programs of early education?
To better support for comprehensive child development programs?   To more
research and development?   The answers to these questions are not un-
equivocal but there is some reason to believe that the heyday of early
childhood education expansion is, if not over, at least threatened.   We
may not yet have reached the "morning after" but there are indications
on all sides that a period of sober reflection is in order.   The
challenges posed in articles as those by my colleague William Rohwer (1971)
in the Harvard Education Review and by Raymond Moore (1972) in a recent
issue of Harpers are real. They will not go unnoticed by either the public
or by policy makers.

In a sense both Rohwer and Moore contend that the available research
does not justify further expansion of early education, at least of a school
centered sort.   Moore, particularly, urges that children possibly up to
the age of seven or eight, not be subjected to what he calls "early
schooling," unless and until research indicates that such is clearly
beneficial and in no way harmful.

My contention is that both the temper of the times and today's social realities, including changing family patterns, and the nature of much of our housing, have created an inevitable demand for early education. Many parents are in desperate need of care and education beyond that they themselves give their children. The kinds of options available to them seem to me likely to depend more on political realities than on the state of the knowledge on which such care and education might be planned.

This statement does not mean that the researchers should now abdicate their scientific roles for political roles. It does mean that the educational researcher, like the rest of his colleagues in science and technology, cannot isolate himself from the social and political context in which he works. Nor, I think, can he escape the fact that whatever practices derive from his theory and research have their social, moral and ethical consequences.

For purposes of this paper I shall try to avoid the rhetoric attendant upon an examination of the large consequences inherent in early childhood research, and look rather to what does seem to have been accomplished, and to what seem to be some of the questions that now need to be answered.

What I have to say is based mostly on impressions from reading some of the research reports and many of the review articles that have appeared recently, scanning the developmental and educational psychology journals, and the ERIC materials related to early childhood.

Early childhood research encompasses both the basic psychological research related to development and learning, and that dealing more specifically with the child in the educational setting. While the latter concern is of major consideration here, some consideration needs also to be given more basic research.

Basic Psychological Research

As Bettye Caldwell (1970) has said, the initiation of Project Head Start in 1965 gave instant status to a field (early childhood education) that had long been a step-child of both education and psychology. The politics of the time provided many psychologists the opportunity to validate certain aspects of developmental and learning theory in natural settings, such as Head Start, and more importantly in experimental programs where closer monitoring was possible.

New avenues of inquiry opened as three-, four- and five-year-olds of widely differing backgrounds became readily available for the research of psychologists who had previously worked with older children or with middle class nursery school and kindergarten youngsters. Initially, it is true, they tended to treat the cultural differences they found as deficits. Gradually, however, many have moved toward the view that learning and thinking cannot be adequately understood apart from their cultural context. Certainly, if developmental psychology is more comprehensive and less ethnocentric than a decade ago, Head Start and other innovative early childhood programs have contributed to the change.

As of now, the initial excitement over increasing intelligence and achievement by providing preschool curricula based on particular psychological theories has died down. Harder questions are being examined. The preschool child's total functioning is under closer scrutiny. Attentional and motivation factors are being examined. His play is beginning to receive serious consideration. Researchers are no longer limiting their interest to the readily accessible three- and four-year-olds but are extensively studying infants and beginning to devote attention to the toddlers. In occasional instances, psychologists are moving back and forth between the laboratory and the classroom, using the latter to validate and illuminate the findings of the former. Longitudinal studies, essential if we are to have any grasp of the ultimate effects of intervention or of different ways of child caring and education, are under way. The knowledge base on which early childhood education can be built is expanding and undergoing revision.

To some extent current early childhood education reflects this expanding knowledge base. But it also shows some lag.

Educational Research

Michael Katz in his book <u>Class, Bureaucracy and the Schools</u> (1971) notes that the recent expansion of education downward in the attempt to improve the intellectual skills of young children was parallelled by the nineteenth century introduction of the kindergarten to improve attitudes and correct unfavorable home influences. The kindergartens, it seems, did not have to provide the scientific evidence of accomplishment that is expected from the present day programs.

After the initially promising reports from small scale experimental programs the negative findings of the   Westinghouse report on Head Start, 1968, led to a "national debate" (Hellmuth, 1970) that continues. Meanwhile, what might be termed the side effects of Head Start, including such changes as the increased involvement of parents in school and community affairs, and the improved availability of health and other services have been examined (Kirschner-Associates, 1970). Follow through programs of differing kinds have been put into operation. Research designed to compare the relative effectiveness of different curriculum models is underway (Planned Variation, 1971). By the end of 1971, the available evidence from a number of evaluative and comparative studies of Head Start and other experimental programs had been reviewed several times. (See for example, Datta, 1972; McFadden, 1970; Miller, 1972; Stearns, 1971). The research problems were given major prominence in Volume 3 of the Disadvantaged Child, edited by Hellmuth, and also in the 1972 Yearbook of the National Society for the Study of Education.

Stearns (1971) in a report to the Office of Child Development, summarizes the evidence succinctly. She notes that, over the short run, public preschool programs have been successful in changing the intellectual and social behavior of disadvantaged children in positive directions. In small scale expertly staffed experimental programs, the improvements in measured intellectual abilities have been even more striking. However, after several years the children who have had the preschool experience show no advantage as far as school achievement is concerned over those who did not have it.

Reactions to the "Failure" of Early Intervention

These findings have brought forth a range of reactions on the part
of the researchers, policy makers and the public. Such reactions are, of
course, tied to the reactor's views of what is going on in other aspects
of our society, and to his theories of development and learning.
Accordingly they are more complex than are the three categories that I
am assigning them.

First, "let's abandon the effort to extend public education downward." This reaction finds support in
current studies purporting to show that schooling makes relatively little
difference in adult status and income (Bane and Jencks 1972). Such a
reaction also finds some support among those who have come to recognize
that many, if not most, of the preschool programs have been culturally
biased to a limited middle class view not only in goals and tests but
also in program content.

A second reaction is "put the responsibility for early education
back in the home where it belongs." This reaction receives support from
the finding that the most effective experimental programs have been
characterized by parental understanding of program purposes and by enlistment of
the mother as a teacher either in the classroom or the home. Research in
infancy is also called on to support this view.

A third reaction comes from those with a so-called "traditional"
nursery school view. It says, "let's take the cognitive pressure off
the preschooler and give proper attention to his social and emotional
development." This reaction goes along with the statement John Anderson

made about the content of preschool programs nearly twenty-five years ago. "It is not what the child learns in formal terms which is important, but what he gains from experiences in the way of self-control, emotional balance, initiative, interest, and enthusiasm for the material in question." Unfortunately, while it has been possible, albeit roughly, to measure cognitive gains, whatever social and emotional benefits have accrued in the experimental programs have been difficult to measure.

It seems to me unlikely that any of these reactions clearly point the direction early education. particularly that for the child between the ages of three and five is likely to take. It is true that kindergartens have only gradually been accepted as an integral part of public schooling and still have some way to go in that direction. But it is also true that, apart from the public schools, a variety of private, cooperative, and commercial ventures have made some form of early education available to many parents. An increasing number of less privileged parents have also enrolled their children in early childhood programs. From neither group, I think, is there any ground swell of opinion urging the aboliti of available nursery schools, prekindergarten or kindergarten programs. Nor, I think, is there any demand that early education, whether for three-, four- or even five-year-olds should be made compulsory. But in both groups, I sense a growing conviction that a wider range of options for parents, as related to both education and care, is essential. Regardless of whether these options are provided within the public school system or are developed in the community and operated by the parents, there are any number of

persistent questions that can only be answered through research efforts.
Some of these areas of needed research require comprehensive planning,
beyond the scope of any single center, but others are more limited and could
be carried on by the staff and parents within a single center or group of
centers. We need the kind of research that helps us do a better job with children.

Strategies for Comprehensive Research

Carl Bereiter (1972), noting that, "existing technology already
enables us to teach young children far more than they can benefit from,"
suggests that what we need to do is to "construct articulated educational
programs that permit us to teach in the preschool what will be of use later
and to teach later what builds upon what was taught in the preschool."
He thinks there is little to be gained in research limited to the pre-
school level. Rather, preschool research should now be incorporated into
the programs of research at the elementary school level.   .

My colleague, William Rohwer (1972) takes a somewhat similar stand.
Drawing on his own research in verbal learning he proposes a strategy for
establishing how and when a particular skill or particular content can
be learned with ease. The strategy involves cumulative research using
tasks that tap a psychological process involved in school learning; applying
these tasks, which should resemble but also differ from typical school
tasks, over as wide a developemental range as possible to determine
possible developmental shifts; experimenting to find the conditions for
optimal performance at different ages and with different kinds of children.
Instruction would then be planned in accordance with the findings.

This strategy has considerable appeal, and

in instruction if the array of psychological pro

learning could be readily identified. Rohwer un

search not for ways of making children precociou

assisting them to be optimally effective. Some

led him to suggest that formal schooling might we

seven or even later.

The Developmental Context of Instruction

The importance of developmental investigatio

any attempt to move from the psychology of learni

instruction cannot be overestimated. As Sigel (1

the human organism is made up of a variety of sub

cognitive, language, sensori-motor and so on. Th

these systems appear to differ at different stage

instruction related to a particular subsystem may

on other subsystems at different points in time.

of instruction in one subsystem may also depend

contexts for learning at succeeding stages of de

Sheldon White (1970) has outlined the matri

that occur between five and seven years. His ev

different fields, highlights the many respects i

thinks, learns and generally responds differentl

But the significance of the developmental chara

to have been very deeply explored by either progr

researchers. While some program developers in th

environmental effects." These relationships, she added,"greatly complicate
the problems of the research worker." In 1972, Messick and Barrows again
comment on such relationships, but propose a methodology for dealing with
them. They spell out in considerable detail, the domains in which measure-
ment must occur if the effects of a particular intervention or program are
to be adequately understood.

In some of these domains measuring instruments are already available,
in others they must be developed. One hopes for caution and reflection
here, for it is quite clear that many of the inadequacies of the presently
available research stem from the use of instruments that were not really
appropriate for the uses to which they were put.

In any event, at this point in time it is not clear whether many
large scale studies, involving many children, and the manipulations of
many variables, will be funded. Even if they should be, research of a
rather different sort is also in order.

Within each of the measurement domains outlined by Messick and
Barrows there are many questions that need to be answered. In many
instances, small scale studies, perhaps replicated many times, seem in
order. Furthermore, many questions cannot be adequately answered nor will
whatever answers are found make any difference to early childhood
education, unless ways can be found to involve both teachers and parents
in the research process.

Scepticism About Research

It is no secret that educational research, and perhaps most especially, early childhood education resarch currently faces a credibility gap. Parents, particularly those in minority groups, but many others as well, are not inclined to give permission for their children to participate in any experiments. Research has no pay-off where they are concerned. They are no more sceptical than are many of today's college students. Finally, despite the fact that many of today's early childhood teachers have been involved in various sorts of research, few of them are asking for more involvement. Nor does there appear to be much evidence that whatever involvement they have had is reflected in different or more effective teaching.

In 1967, following a decade that had been noteworthy for the number of research and demonstration programs, many related to early childhood, Goodlad and Klein and a group of associates visited and observed in some one-hundred-and-fifty kindergarten and primary classrooms across the country. They sought evidence as to how the reforms implicit in the research and demonstration efforts were reflected in the classrooms. They found little. A later study of nursery schools brought equally dreary results. My own informal observations on two coasts have pinpointed some classrooms that clearly do reflect what has been going on in research and in innovative programs in the last decade. But they have not led me to believe that their effects are more widespread than Goodlad and Klein found.

The reason research has not been more effectively translated into practice may have to do with the nature of the research enterprise, and perhaps with its funding. The available research technology makes it quite possible to collect and analyze data relating to a multiplicity of variables in quantities unthinkable a decade or two ago. The data and its analysis take on a reality and meaning of their own, quite apart from the educational situations and problems they represent. The distance between the researchers and the researched widens. Perhaps it can be said that as the cognitive distance between the research and its intended consumer increases, interest in applying it decreases. One is reminded of the old story of the farmer who informed the county agent that he had no wish to try any new methods. He already knew how to farm better than he was farming.

Whether or not involvement, as a participant, not merely a subject, in research having clear relevance to the classroom or to the children, would improve practice and increase parent and teacher support for further research is, of course, an empirical question.

Reference to the "action research" that was popular in the early 1950's may provide some clues for answering this question, but circumstances then differ in many respects from those today. Today's technology, both for research and for education has advanced far beyond that of the fifties. It is paralleled by even more spectacular advances in other areas, profoundly affecting our ideology.

Leon Kass (1972), in a recent issue of Science writes, "We are witnessing the erosion, perhaps the final erosion, of the idea of man as something splendid or divine and the replacement with a view that sees man no less than nature as simply more raw material for manipulation and homogenization." Hope, he thinks, "lies only in education, in a public educated about the ways and limits of science and enlightened in its use of technology." Further he suggests that the current lack of money for research gives time to rethink and reorder our priorities.

The situation with regard to early childhood education research is not dissimilar to that Kass describes for biological research. Funding is likely to be relatively limited. We too need time to rethink and reorder our priorities keeping in mind our concern for maintaining our humanness. What are some of the steps we might be taking?

Next Steps

We have only to look at what Messick and Barrows have identified as domains of largely unmeasured variables to formulate some of the questions researchers, together with parents and teachers, might investigate.

The Child and His Family

Consider first the child and his family. There should be no need to belabor the ethnocentric assumptions in much recent early childhood research and in many programs. With increasing awareness of the stereo-typing implicit in the nature of cultural deprivation, it may be possible to come to terms with the realities faced by parents in different groups and the specific nature of their strengths, their concerns and aspirations for their children as well as the specific nature of their relationships with them.

The notion of the "whole child" needs reconsideration, not as a cliché,
but with a view to better understanding of the meaning of individualization.
In the last decade many measures of cognition, many ways of looking at
cognitive processes in young children, have been developed. Is it not
time to examine more closely how such processes are reflected in the
social-emotional behavior of the individual child as well as in his
.chool tasks?   Are assessment procedures to be limited to cognitive
processes? What is a reasonable balance between time given to assessment,
time given to instruction and time for the child to proceed on his own?
Currently, at least in some parts of the country, and even as early as
kindergarten as much or more time is spent in assessment as in instruction,
with little if any time left for the child's autonomous investigation and
learning, for him to find out who he is.

While one finds in the current literature of early childhood education,
and in the research related to it, considerable emphasis on invividualization,
case studies of young children revealing the nature of their individuality
and its significance for their education are rarely encountered. Do we
not need in the 1970's researchers who will work with parents, teachers
and children to show now young Black, Chicano, Asian, Native American and
other children from varying backgrounds cope with their widening world,
much as Lois Murphy described Topeka children in the 1950's?

Ways also need to be found to get at the children's perceptions
of what goes on in the classroom. It is too easy to assume that their
performance reveals all they know or feel. How many times, for example,

have children presented a facade to the teachers such as that recently

reported by an anthropological observer (Burger, 1972). A group of

Spanish surname six-year-olds vere being taught English in a behavior

modification program. They were not responding appropriately, giving

the teacher, for example, an orange when she asked for an apple. Once

the teacher left the room, however, the children with roars of laughter,

began an elaborate mimicry of the earlier task, first giving the

correct response to each object, and then chanting every possible wrong

name.

The Classroom and the Teaching

The classroom and the teaching each represent additional domains

for investigation. In recent research the curriculum model in use has

received major attention. Indeed, for a period of two or three years,

finding dimensions on which to categorize different curricula became a

preoccupation for many early childhood educators. Judging from the reports

of Gordon and of Soar in the recent N.S.S.E. Yearbook that preoccupation

has finally paid off, at least at the kindergarten and first grade levels.

Applying interaction analysis, adapted to identify both affective and

cognitive aspects and the sequences of teacher and pupil talk, to class-

rooms representing eight curriculum models, Soar was able to identify

three groups of classrooms within which the differences were not significant,

although the differences between the groups were significant. It should

be noted, however, that the variability within the classrooms representing

a single curriculum model was greater than the differences from model to

model.

The classroom processes revealed by the analysis were found to relate to the cognitive growth of the children. Greater teacher direction increased simple-concrete learning but at the expense of complex-abstract growth. Soar (1972) notes, however, that there are limits with respect to the amounts of pupil freedom, interaction and self-direction that are functional.

Soar's study, taken in conjunction with Gordon's analysis of the instructional theory underlying the various curriculum models raises a number of questions about curriculum, more about teaching.

Aside from the differing reliance they place on workbooks most of the curriculum models look surprisingly alike when seen in operation. Each has a similar array of toys, games and audio-visual equipment, plus the paint, clay, blocks, and in some instances housekeeping equipment that has been standard in the nursery school for years. Does this seemingly infinite variety of materials and equipment really enhance the children's learning? Or does it merely reflect the American propensity for conspicuous consumption? Clearly the teacher is under less pressure to intervene in the children's activities, if there are enough, or more than enough, materials to keep them busy on their own. But how do the children use the materials? What ones are essential? What is gained by adding others? Is it possible to have so many as to detract from both the social and the cognitive interaction of the children? May the teacher become so involved in the acquisition and upkeep and storage of curriculum materials as to lose sight of their essential purpose?

As Weikart (1972) has commented, the curriculum is for the teacher more than for the children. It may be useful to examine the elements of the curriculum that further the fulfillment of the teaching role as contrasted with those that may actually impede it. For it is the role of the teacher that is the major difference between curriculum models.

The Teacher's Role

None of the models assumes that the teacher is a mere bystander. The models differ, however, not only in the expected extent of the teacher's involvement with the children but more importantly in the cognitive demand that involvement places on her. Thus, Gordon's analysis of the models finds that the Engelmann-Becker model requires the least cognitive
                    on the part of the teacher,
effort ∧and the EDC model the most. These extremes reflect the prevailing uncertainity as to whether the teacher is to be regarded as a professional who makes decisions, or whether, in terms of some of the current pressure for accountability, she is a piece worker who contracts to take a certain number of children through a certain number of tasks in a pre-specified time.

It is interesting to note that in some respects, particularly as far as the management of the group and of materials is concerned, the role of the teacher in the new models resembles that of the teacher in the traditional nursery school more than that of the teacher in the traditional elementary school. But, in general, the traditional nursery school

approach has not succeeded as well as the more innovative programs

when dealing with children in poverty areas. The difference, according

to Bereiter (1972) and others is that the traditional nursery school

teacher does not instruct. The "traditional approach," Bereiter says,

"does not represent a different way of teaching from those represented

in newer programs but simply represents a lower order of program, one

that is more custodial and less purposefully educational." "The true

issue," he adds, "is not how young children should be taught but

whether."

In contrast to this position, Weikart distinguishes between programs

that are custodial and those, like the traditional preschool programs

found on college campuses and originally envisioned for Head Start,

that are child centered. In these, the child initiates and the teacher

responds. When well implemented, he finds, these programs do as well for

disadvantaged children as other models. The crucial variable is the

teacher and the support she has.

Clearly, we need to know much more about the range of child initi-

ations and the variety of teacher responses to such initiations, that

is, more about the teaching process particularly at the preschool level.

Observational studies will help but are probably not sufficient. Ways

need to be found to reveal more than the teacher's responses. Are they

merely intuitive or are they guided by theoretical knowledge? It is

probably true for the preschool teacher, as Jackson (1969) reports for

the elementary teacher, that the ongoing demands of the classroom are too
intense for on-the-spot reflection. But this need not preclude an analysis
of the teacher's pre-planning in relation to what actually occurred, nor
perhaps more importantly, an analysis of her reflections on those
occurences.

Other questions need to be asked. For example, how does the
teaching done by parent participants, volunteers, para-professionals
differ from that done by the professionally trained teacher? Or _does_
it differ initially and then come to resemble the teacher? Insistence
that at least one member of the team needs professional training seems
reasonable. But where are the data to show what the professional does
differently from the less well trained? Are the differences important
to the child's thinking and learning or may they merely reflect cultural
differences in child rearing practices that have no necessary consequence
to the child's eventual development? Obviously questions such as these
cannot be easily or quickly answered, but it is clear that we need to
look closely and carefully at the variety of strategies adults have
for teaching the young child, and give consideration to their effects
on him,

The fact that programs for three- and four-year-olds and to an
increasing extent those for five- and six-year-olds increasingly involve
the operation of a team raises additional questions about the teacher's
role. How much of her time is spent in interaction, not with children

but with other adults, and what goes on in those interactions? What effect does this changing and expansion of the teacher's role have cn her effectiveness with children and on satisfactions she derives from it?

In the past it appeared that many individuals who elected to teach at the earliest levels, did so because they preferred working with children to working with adults. Is this true at the present time?

The researchers appear to agree that teachers differ in how well they fill the teaching role but they seem not to have asked what qualities in the teacher make for a good fit with a particular model. Would a good Engelman-Becker teacher also be a good EDC teacher and vice versa? Put another way, are self-selecting and matching processes at work, so that the teacher teaches well if the curriculum and the age period is one to which she is cognitively and emotionally well adapted?

And what if the teacher is a man? The increasing involvement of men in early childhood programs provides an excellent opportunity to examine some of the assumptions that have dominated teaching at this level. Has it been dominated by feminine conceptions and goals? Do those who are consciously aware of sex stereotyping teach differently from those who are more traditionally oriented?

The Institutional Setting

Investigation of teaching should also raise questions about another set of variables, those having to do with its institutional setting. Preschool programs are now to be found in many public schools, but they

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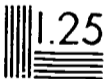important at this
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ABSTRACT
                This review of early childhood research examines what
has been accomplished in the field and what questions now need to be
answered. Project Head Start has had the effect of helping
developmental psychology to become more comprehensive and less
ethnocentric than previously. Developmental psychologists are now
studying infants and toddlers and the preschool child's total
functioning. Educational researchers are currently reacting to the
apparent failure of public preschool programs to improve the later
school achievement of disadvantaged children. The trend will probably
be toward a wider range of options concerning types of early
education. Developmental research in early education, involving
studies of how and when particular skills and content can best be
learned, is necessary to create an effective instructional program.
Little research has been done on the developmental characteristics of
3- and 4-year-olds, and few instructional programs have recognized
the important role fantasy and spontaneous play have in a child's
cognitive development. The scope of research in early childhood
education needs to be broadened and put in a more comprehensive
developmental framework, although approaches are becoming
increasingly sophisticated. Involvement with collecting and analyzing
data has widened the distance between the researcher and the
researched, and researchers should use the current period of limited
funding to rethink and reorder priorities. Researchers might
investigate the child and his family, the classroom and the teaching,
the teacher's role, and institutional setting, and research and the
researcher. (KM)

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EARLY CHILDHOOD RESEARCH: SECOND THOUGHTS AND NEXT STEPS

In the past decade the period of early childhood has received
unprecedented attention from psychologists and educators and from the
public. During these years hundreds of experimental studies and
demonstration projects have focused on the young child's development and
learning, both as an individual, and in groups. The research reports
must be weighed by the ton.

Where is all this leading us? To expanded programs of early education?
To better support for comprehensive child development programs? To more
research and development? The answers to these questions are not un-
equivocal but there is some reason to believe that the heyday of early
childhood education expansion is, if not over, at least threatened. We
may not yet have reached the "morning after" but there are indications
on all sides that a period of sober reflection is in order. The
challenges posed in articles as those by my colleague William Rohwer (1971)
in the Harvard Education Review and by Raymond Moore (1972) in a recent
issue of Harpers are real. They will not go unnoticed by either the public
or by policy makers.

In a sense both Rohwer and Moore contend that the available research
does not justify further expansion of early education, at least of a school
centered sort. Moore, particularly, urges that children possibly up to
the age of seven or eight, not be subjected to what he calls "early
schooling," unless and until research indicates that such is clearly
beneficial and in no way harmful.

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My contention : . that both the temper of the times and today's social realities, including changing family patterns, and the nature of much of cur housing, have created an inevitable demand for early education. Many parents are in desperate need of care and education beyond that they them-selves give their children. The kinds of options available to them seem to me likely to depend more on political realities than on the state of the knowledge on which such care and education might be planned.

This statement does not mean that the researchers should now abdicate their scientific roles for political roles. It does mean that the educational researcher, like the rest of his colleagues in science and technology, cannot isolate himself from the social and political context in which he works. Nor, I think, can he escape the fact that whatever practices derive from his theory and research have their social, moral and ethical consequences.

For purposes of this paper I shall try to avoid the rhetoric attendant upon an examination of the large consequences inherent in early childhood research, and look rather to what does seem to have been accomplished, and to what seem to be some of the questions that now need to be answered.

What I have to say is based mostly on impressions from reading some of the research reports and many of the review articles that have appeared recently, scanning the developmental and educational psychology journals, and the ERIC materials related to early childhood.

Early childhood research encompasses both the basic psychological research related to development and learning, and that dealing more specifically with the child in the educational setting. While the latter concern is of major consideration here, some consideration needs also to be given more basic research.

Basic Psychological Research

As Bettye Caldwell (1970) has said, the initiation of Project Head Start in 1965 gave instant status to a field (early childhood education) that had long been a step-child of both education and psychology. The politics of the time provided many psychologists the opportunity to validate certain aspects of developmental and learning theory in natural settings, such as Head Start, and more importantly in experimental programs where closer monitoring was possible.

New avenues of inquiry opened as three-, four- and five-year-olds of widely differing backgrounds became readily available for the research of psychologists who had previously worked with older children or with middle class nursery school and kindergarten youngsters. Initially, it is true, they tended to treat the cultural differences they found as deficits. Gradually, however, many have moved toward the view that learning and thinking cannot be adequately understood apart from their cultural context. Certainly, if developmental psychology is more comprehensive and less ethnocentric than a decade ago, Head Start and other innovative early childhood programs have contributed to the change.

As of now, the initial excitement over increasing intelligence and achievement by providing preschool curricula based on particular psychological theories has died down. Harder questions are being examined. The preschool child's total functioning is under closer scrutiny. Attentional and motivation factors are being examined. His play is beginning to receive serious consideration. Researchers are no longer limiting their interest to the readily accessible three- and four-year-olds but are extensively studying infants and beginning to devote attention to the toddlers. In occasional instances, psychologists are moving back and forth between the laboratory and the classroom, using the latter to validate and illuminate the findings of the former. Longitudinal studies, essential if we are to have any grasp of the ultimate effects of intervention or of different ways of child caring and education, are under way. The knowledge base on which early childhood education can be built is expanding and undergoing revision.

To some extent current early childhood education reflects this expanding knowledge base. But it also shows some lag.

Educational Research

Michael Katz in his book Class, Bureaucracy and the Schools (1971) notes that the recent expansion of education downward in the attempt to improve the intellectual skills of young children was parallelled by the nineteenth century introduction of the kindergarten to improve attitudes and correct unfavorable home influences. The kindergartens, it seems, did not have to provide the scientific evidence of accomplishment that is expected from the present day programs.

After the initially promising reports from small scale experimental programs the negative findings of the Westinghouse report on Head Start, 1968, led to a "national debate" (Hellmuth, 1970) that continues. Meanwhile, what might be termed the side effects of Head Start, including such changes as the increased involvement of parents in school and community affairs, and the improved availability of health and other services have been examined (Kirschner-Associates, 1970). Follow through programs of differing kinds have been put into operation. Research designed to compare the relative effectiveness of different curriculum models is underway (Planned Variation, 1971). By the end of 1971, the available evidence from a number of evaluative and comparative studies of Head Start and other experimental programs had been reviewed several times. (See for example, Datta, 1972; McFadden, 1970; Miller, 1972; Stearns, 1971). The research problems were given major prominence in Volume 3 of the Disadvantaged Child, edited by Hellmuth, and also in the 1972 Yearbook of the National Society for the Study of Education.

Stearns (1971) in a report to the Office of Child Development, summarizes the evidence succinctly. She notes that, over the short run, public preschool programs have been successful in changing the intellectual and social behavior of disadvantaged children in positive directions. In small scale expertly staffed experimental programs, the improvements in measured intellectual abilities have been even more striking. However, after several years the children who have had the preschool experience show no advantage as far as school achievement is concerned over those who did not have it.

Reactions to the "Failure" of Early Intervention

These findings have brought forth a range of reactions on the part of the researchers, policy makers and the public. Such reactions are, of course, tied to the reactor's views of what is going on in other aspects of our society, and to his theories of development and learning. Accordingly they are more complex than are the three categories that I am assigning them.

First, "let's abandon the effort to extend public education downward." This reaction finds support in current studies purporting to show that schooling makes relatively little difference in adult status and income (Bane and Jencks 1972). Such a reaction also finds some support among those who have come to recognize that many, if not most, of the preschool programs have been culturally biased to a limited middle class view not only in goals and tests but also in program content.

A second reaction is "put the responsibility for early education back in the home where it belongs." This reaction receives support from the finding that the most effective experimental programs have been characterized by parental understanding of program purposes and by enlistment of the mother as a teacher either in the classroom or the home. Research in infancy is also called on to support this view.

A third reaction comes from those with a so-called "traditional" nursery school view. It says, "let's take the cognitive pressure off the preschooler and give proper attention to his social and emotional development." This reaction goes along with the statement John Anderson

made about the content of preschool programs nearly twenty-five years ago. "It is not what the child learns in formal terms which is important, but what he gains from experiences in the way of self-control, emotional balance, initiative, interest, and enthusiasm for the material in question." Unfortunately, while it has been possible, albeit roughly, to measure cognitive gains, whatever social and emotional benefits have accrued in the experimental programs have been difficult to measure.

It seems to me unlikely that any of these reactions clearly point the direction early education, particularly that for the child between the ages of three and five is likely to take. It is true that kindergartens have only gradually been accepted as an integral part of public schooling and still have some way to go in that direction. But it is also true that, apart from the public schools, a variety of private, cooperative, and commercial ventures have made some form of early education available to many parents. An increasing number of less privileged parents have also enrolled their children in early childhood programs. From neither group, I think, is there any ground s· l of opinion urging the abolition of available nursery schools, prekindergarten or kindergarten programs. Nor, I think, is there any demand that early education, whether for three-, four- or even five-year-olds should be made compulsory. But in both groups, I sense a growing conviction that a wider range of options for parents, as related to both education and care, is essential. Regardless of whether these options are provided within the public school system or are developed in the community and operated by the parents, there are any number of

persistent questions that can only be answered through research efforts.
Some of these areas of needed research require comprehensive planning,
beyond the scope of any single center, but others are more limited and could
be carried on by the staff and parents within a single center or group of
centers. We need the kind of research that helps us do a better job with children.

Strategies for Comprehensive Research

Carl Bereiter (1972), noting that, "existing technology already
enables us to teach young children far more than they can benefit from,"
suggests that what we need to do is to "construct articulated educational
programs that permit us to teach in the preschool what will be of use later
and to teach later what builds upon what was taught in the preschool."
He thinks there is little to be gained in research limited to the pre-
school level. Rather, preschool research should now be incorporated into
the programs of research at the elementary school level.   .

My colleague, William Rohwer (1972) takes a somewhat similar stand.
Drawing on his own research in verbal learning he proposes a strategy for
establishing how and when a particular skill or particular content can
be learned with ease. The strategy involves cumulative research using
tasks that tap a psychological process involved in school learning; applying
these tasks, which should resemble but also differ from typical school
tasks, over as wide a developemental range as possible to determine
possible developmental shifts; experimenting to find the conditions for
optimal performance at different ages and with different kinds of children.
Instruction would then be planned in accordance with the findings.

environmental effects." These relationships, she added, "greatly complicate the problems of the research worker." In 1972, Messick and Barrows again comment on such relationships, but propose a methodology for dealing with them. They spell out in considerable detail, the domains in which measurement must occur if the effects of a particular intervention or program are to be adequately understood.

In some of these domains measuring instruments are already available, in others they must be developed. One hopes for caution and reflection here, for it is quite clear that many of the inadequacies of the presently available research stem from the use of instruments that were not really appropriate for the uses to which they were put.

In any event, at this point in time it is not clear whether many large scale studies, involving many children, and the manipulations of many variables, will be funded. Even if they should be, research of a rather different sort is also in order.

Within each of the measurement domains outlined by Messick and Barrows there are many questions that need to be answered. In many instances, small scale studies, perhaps replicated many times, seem in order. Furthermore, many questions cannot be adequately answered nor will whatever answers are found make any difference to early childhood education, unless ways can be found to involve both teachers and parents in the research process.

Scepticism About Research

It is no secret that educational research, and perhaps most especially, early childhood education resarch currently faces a credibility gap. Parents, particularly those in minority groups, but many others as well, are not inclined to give permission for their children to participate in any experiments. Research has no pay-off where they are concerned. They are no more sceptical than are many of today's college students. Finally, despite the fact that many of today's early childhood teachers have been involved in various sorts of research, few of them are asking for more involvement. Nor does there appear to be much evidence that whatever involvement they have had is reflected in different or more effective teaching.

In 1967, following a decade that had been noteworthy for the number of research and demonstration programs, many related to early childhood, Goodlad and Klein and a group of associates visited and observed in some one-hundred-and-fifty kindergarten and primary classrooms across the country. They sought evidence as to how the reforms implicit in the research and demonstration efforts were reflected in the classrooms. They found little. A later study of nursery schools brought equally dreary results. My own informal observations on two coasts have pinpointed some classrooms that clearly do reflect what has been going on in research and in innovative programs in the last decade. But they have not led me to believe that their effects are more widespread than Goodlad and Klein found.

The reason research has not been more effectively translated into practice may have to do with the nature of the research enterprise, and perhaps with its funding. The available research technology makes it quite possible to collect and analyze data relating to a multiplicity of variables in quantities unthinkable a decade or two ago. The data and its analysis take on a reality and meaning of their own, quite apart from the educational situations and problems they represent. The distance between the researchers and the researched widens. Perhaps it can be said that as the cognitive distance between the research and its intended consumer increases, interest in applying it decreases. One is reminded of the old story of the farmer who informed the county agent that he had no wish to try any new methods. He already knew how to farm better than he was farming.

Whether or not involvement, as a participant, not merely a subject, in research having clear relevance to the classroom or to the children, would improve practice and increase parent and teacher support for further research is, of course, an empirical question.

Reference to the "action research" that was popular in the early 1950's may provide some clues for answering this question, but circumstances then differ in many respects from those today. Today's technology, both for research and for education has advanced far beyond that of the fifties. It is paralleled by even more spectacular advances in other areas, profoundly affecting our ideology.

Leon Kass (1972), in a recent issue of Science writes, "We are
witnessing the erosion, perhaps the final erosion, of the idea of man
as something splendid or divine and the replacement with a view that
sees man no less than nature as simply more raw material for manipulation
and homogenization." Hope, he thinks, "lies only in education, in a public
educated about the ways and limits of science and enlightened in its use
of technology." Further he suggests that the current lack of money for
research gives time to rethink and reorder our priorities.

The situation with regard to early childhood education research is
not dissimilar to that Kass describes for biological research. Funding is
likely to be relatively limited. We too need time to rethink and reorder
our priorities keeping in mind our concern for maintaining our humanness.
What are some of the steps we might be taking?

Next Steps

We have only to look at what Messick and Barrows have identified as
domains of largely unmeasured variables to formulate some of the questions
researchers, together with parents and teachers, might investigate.

The Child and His Family

Consider first the child and his family. There should be no need to
belabor the ethnocentric assumptions in much recent early childhood
research and in many programs. With increasing awareness of the stereo-
typing implicit in the nature of cultural deprivation, it may be possible
to come to terms with the realities faced by parents in different groups
and the specific nature of their strengths, their concerns and aspirations
for their children as well as the specific nature of their relationships
with them.

The notion of the "whole child" needs reconsideration, not as a cliché, but with a view to better understanding of the meaning of individualization. In the last decade many measures of cognition, many ways of looking at cognitive processes in young children, have been developed. Is it not time to examine more closely how such processes are reflected in the social-emotional behavior of the individual child as well as in his school tasks?   Are assessment procedures to be limited to cognitive processes? What is a reasonable balance between time given to assessment, time given to instruction and time for the child to proceed on his own? Currently, at least in some parts of the country, and even as early as kindergarten as much or more time is spent in assessment as in instruction, with little if any time left for the child's autonomous investigation and learning, for him to find out who he is.

While one finds in the current literature of early childhood education, and in the research related to it, considerable emphasis on invividualization, case studies of young children revealing the nature of their individuality and its significance for their education are rarely encountered. Do we not need in the 1970's researchers who will work with parents, teachers and children to show now young Black, Chicano, Asian, Native American and other children from varying backgrounds cope with their widening world, much as Lois Murphy described Topeka children in the 1950's?

Ways also need to be found to get at the children's perceptions of what goes on in the classroom. It is too easy to assume that their performance reveals all they know or feel. How many times, for example,

have children presented a facade to the teachers such as that recently

reported by an anthropological observer (Burger, 1972). A group of

Spanish surname six-year-olds were being taught English in a behavior

modification program. They were not responding appropriately, giving

the teacher, for example, an orange when she asked for an apple. Once

the teacher left the room, however, the children with roars of laughter,

began an elaborate mimicry of the earlier task, first giving the

correct response to each object, and then chanting every possible wrong

name.

The Classroom and the Teaching

The classroom and the teaching each represent additional domains

for investigation. In recent research the curriculum model in use has

received major attention. Indeed, for a period of two or three years,

finding dimensions on which to categorize different curricula became a

preoccupation for many early childhood educators. Judging from the reports

of Gordon and of Soar in the recent N.S.S.E. Yearbook that preoccupation

has finally paid off, at least at the kindergarten and first grade levels.

Applying interaction analysis, adapted to identify both affective and

cognitive aspects and the sequences of teacher and pupil talk, to class-

rooms representing eight curriculum models, Soar was able to identify

three groups of classrooms within which the differences were not significant,

although the differences between the groups were significant. It should

be noted, however, that the variability within the classrooms representing

a single curriculum model was greater than the differences from model to

model.

The classroom processes revealed by the analysis were found to
relate to the cognitive growth of the children. Greater teacher direction
increased simple-concrete learning but at the expense of complex-abstract
growth. Soar (1972) notes, however, that ther. are limits with respect
to the amounts of pupil freedom, interaction and self-direction that
are functional.

Soar's study, taken in conjunction with Gordon's analysis of the
instructional theory underlying the various curriculum models raises a
number of questions about curriculum, more about teaching.

Aside from the differing reliance they place on workbooks most of
the curriculum models look surprisingly alike when seen in operation.
Each has a similar array of toys, games and audio-visual equipment, plus
the paint, clay, blocks, and in some instances housekeeping equipment
that has been standard in the nursery school for years. Does this
seemingly infinite variety of materials and equipment really enhance
the children's learning? Or does it merely reflect the American propensity
for conspicuous consumption? Clearly the teacher is under less pressure
to intervene in the children's activities, if there are enough, or more
than enough, materials to keep them busy on their own. But how do the
children use the materials? What ones are essential? What is gained by
adding others? Is it possible to have so many as to detract from both
the social and the cognitive interaction of the children? May the teacher
become so involved in the acquisition and upkeep and storage of
curriculum materials as to lose sight of their essential purpose?

As Weikart (1972) has commented, the curriculum is for the teacher
more than for the children. It may be useful to examine the elements of
the curriculum that further the fulfillment of the teaching role as
contrasted with those that may actually impede it. For it is the role of
the teacher that is the major difference between curriculum models.

The Teacher's Role

None of the models assumes that the teacher is a mere bystander.
The models differ, however, not only in the expected extent of the teacher's
involvement with the children but more importantly in the cognitive demand
that involvement places on her. Thus, Gordon's analysis of the models
finds that the Engelmann-Becker model requires the least cognitive
        on the part of the teacher,
effort ∧ and the EDC model the most. These extremes reflect the prevailing
uncertainity as to whether the teacher is to be regarded as a professional
who makes decisions, or whether, in terms of some of the current pressure
for accountability, she is a piece worker who contracts to take a certain
number of children through a certain number of tasks in a pre-specified
time.

It is interesting to note that in some respects, particularly as far
as the management of the group and of materials is concerned, the role of
the teacher in the new models resembles that of the teacher in the
traditional nursery school more than that of the teacher in the traditional
elementary school. But, in general, the traditional nursery school

approach has not succeeded as well as the more innovative programs

when dealing with children in poverty areas. The difference, according

to Bereiter (1972) and others is that the traditional nursery school

teacher does not instruct. The "traditional approach," Bereiter says,

"does not represent a different way of teaching from those represented

in newer programs but simply represents a lower order of program, one

that is more custodial and less purposefully educational." "The true

issue," he adds, "is not how young children should be taught but

wh_ther."

In contrast to this position, Weikart distinguishes between programs

that are custodial and those, like the traditional preschool programs

found on college campuses and originally envisioned for Head Start,

that are child centered. In these, the child initiates and the teacher

responds. When well implemented, he finds, these programs do as well for

disadvantaged children as other models. The crucial variable is the

teacher and the support she has.

Clearly, we need to know much more about the range of child initi-

ations and the variety of teacher responses to such initiations, that

is, more about the teaching process particularly at the preschool level.

Observational studies will help but are probably not sufficient. Ways

need to be found to reveal more than the teacher's responses. Are they

merely intuitive or are they guided by theoretical knowledge? It is

probably true for the preschool teacher, as Jackson (1969) reports for

the elementary teacher, that the ongoing demands of the classroom are too

intense for on-the-spot reflection. But this need not preclude an analysis

of the teacher's pre-planning in relation to what actually occurred, nor

perhaps more importantly, an analysis of her reflections on those

occurences.

Other questions need to be asked. For example, how does the

teaching done by parent participants, volunteers, para-professionals

differ from that done by the professionally trained teacher? Or does

it differ initially and then come to resemble the teacher? Insistence

that at least one member of the team needs professional training seems

reasonable. But where are the data to show what the professional does

differently from the less well trained? Are the differences important

to the child's thinking and learning or may they merely reflect cultural

differences in child rearing practices that have no necessary consequence

to the child's eventual development? Obviously questions such as these

cannot be easily or quickly answered, but it is clear that we need to

look closely and carefully at the variety of strategies adults have

for teaching the young child, and give consideration to their effects

on him,

The fact that programs for three- and four-year-olds and to an

increasing extent those for five- and six-year-olds increasingly involve

the operation of a team raises additional questions about the teacher's

role. How much of her time is spent in interaction, not with children

but with other adults, and what goes on in those interactions? What
effect does this changing and expansion of the teacher's role have cn
her effectiveness with children and on satisfactions she derives from it?

In the past it appeared that many individuals who elected to
teach at the earliest levels, did so because they preferred working with
children to working with adults. Is this true at the present time?

The researchers appear to agree that teachers differ in how well
they fill the teaching role but they seem not to have asked what
qualities in the teacher make for a good fit with a particular model.
Would a good Engelman-Becker teacher also be a good EDC teacher and
vice versa? Put another way, are self-selecting and matching processes
at work, so that the teacher teaches well if the curriculum and the age
period is one to which she is cognitively and emotionally well adapted?

And what if the teacher is a man? The increasing involvement of
men in early childhood programs provides an excellent opportunity to
examine some of the assumptions that have dominated teaching at this
level. Has it been dominated by feminine conceptions and goals? Do
those who are consciously aware of sex stereotyping teach differently from
those who are more traditionally oriented?

The Institutional Setting

Investigation of teaching should also raise questions about another
set of variables, those having to do with its institutional setting.
Preschool programs are now to be found in many public schools, but they

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ABSTRACT
         This review of early childhood research examines what
has been accomplished in the field and what questions now need to be
answered. Project Head Start has had the effect of helping
developmental psychology to become more comprehensive and less
ethnocentric than previously. Developmental psychologists are now
studying infants and toddlers and the preschool child's total
functioning. Educational researchers are currently reacting to the
apparent failure of public preschool programs to improve the later
school achievement of disadvantaged children. The trend will probably
be toward a wider range of options concerning types of early
education. Developmental research in early education, involving
studies of how and when particular skills and content can best be
learned, is necessary to create an effective instructional program.
Little research has been done on the developmental characteristics of
3- and 4-year-olds, and few instructional programs have recognized
the important role fantasy and spontaneous play have in a child's
cognitive development. The scope of research in early childhood
education needs to be broadened and put in a more comprehensive
developmental framework, although approaches are becoming
increasingly sophisticated. Involvement with collecting and analyzing
data has widened the distance between the researcher and the
researched, and researchers should use the current period of limited
funding to rethink and reorder priorities. Researchers might
investigate the child and his family, the classroom and the teaching,
the teacher's role, and institutional setting, and research and the
researcher. (KM)

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EARLY CHILDHOOD RESEARCH: SECOND THOUGHTS AND NEXT STEPS

In the past decade the period of early childhood has received unprecedented attention from psychologists and educators and from the public. During these years hundreds of experimental studies and demonstration projects have focused on the young child's development and learning, both as an individual, and in groups. The research reports must be weighed by the ton.

Where is all this leading us? To expanded programs of early education? To better support for comprehensive child development programs? To more research and development? The answers to these questions are not un-equivocal but there is some reason to believe that the heyday of early childhood education expansion is, if not over, at least threatened. We may not yet have reached the "morning after" but there are indications on all sides that a period of sober reflection is in order. The challenges posed in articles as those by my colleague William Rohwer (1971) in the Harvard Education Review and by Raymond Moore (1972) in a recent issue of Harpers are real. They will not go unnoticed by either the public or by policy makers.

In a sense both Rohwer and Moore contend that the available research does not justify further expansion of early education, at least of a school centered sort. Moore, particularly, urges that children possibly up to the age of seven or eight, not be subjected to what he calls "early schooling," unless and until research indicates that such is clearly beneficial and in no way harmful.

My contention is that both the temper of the times and today's social realities, including changing family patterns, and the nature of much of our housing, have created an inevitable demand for early education. Many parents are in desperate need of care and education beyond that they themselves give their children. The kinds of options available to them seem to me likely to depend more on political realities than on the state of the knowledge on which such care and education might be planned.

This statement does not mean that the researchers should now abdicate their scientific roles for political roles. It does mean that the educational researcher, like the rest of his colleagues in science and technology, cannot isolate himself from the social and political context in which he works. Nor, I think, can he escape the fact that whatever practices derive from his theory and research have their social, moral and ethical consequences.

For purposes of this paper I shall try to avoid the rhetoric attendant upon an examination of the large consequences inherent in early childhood research, and look rather to what does seem to have been accomplished, and to what seem to be some of the questions that now need to be answered.

What I have to say is based mostly on impressions from reading some of the research reports and many of the review articles that have appeared recently, scanning the developmental and educational psychology journals, and the ERIC materials related to early childhood.

Early childhood research encompasses both the basic psychological research related to development and learning, and that dealing more specifically with the child in the educational setting. While the latter concern is of major consideration here, some consideration needs also to be given more basic research.

Basic Psychological Research

As Bettye Caldwell (1970) has said, the initiation of Project Head Start in 1965 gave instant status to a field (early childhood education) that had long been a step-child of both education and psychology. The politics of the time provided many psychologists the opportunity to validate certain aspects of developmental and learning theory in natural settings, such as Head Start, and more importantly in experimental programs where closer monitoring was possible.

New avenues of inquiry opened as three-, four- and five-year-olds of widely differing backgrounds became readily available for the research of psychologists who had previously worked with older children or with middle class nursery school and kindergarten youngsters. Initially, it is true, they tended to treat the cultural differences they found as deficits. Gradually, however, many have moved toward the view that learning and thinking cannot be adequately understood apart from their cultural context. Certainly, if developmental psychology is more comprehensive and less ethnocentric than a decade ago, Head Start and other innovative early childhood programs have contributed to the change.

As of now, the initial excitement over increasing intelligence and achievement by providing preschool curricula based on particular psychological theories has died down. Harder questions are being examined. The preschool child's total functioning is under closer scrutiny. Attentional and motivation factors are being examined. His play is beginning to receive serious consideration. Researchers are no longer limiting their interest to the readily accessible three- and four-year-olds but are extensively studying infants and beginning to devote attention to the toddlers. In occasional instances, psychologists are moving back and forth between the laboratory and the classroom, using the latter to validate and illuminate the findings of the former. Longitudinal studies, essential if we are to have any grasp of the ultimate effects of intervention or of different ways of child caring and education, are under way. The knowledge base on which early childhood education can be built is expanding and undergoing revision.

To some extent current early childhood education reflects this expanding knowledge base. But it also shows some lag.

Educational Research

Michael Katz in his book Class, Bureaucracy and the Schools (1971) notes that the recent expansion of education downward in the attempt to improve the intellectual skills of young children was parallelled by the nineteenth century introduction of the kindergarten to improve attitudes and correct unfavorable home influences. The kindergartens, it seems, did not have to provide the scientific evidence of accomplishment that is expected from the present day programs.

After the initially promising reports from small scale experimental programs the negative findings of the   Westinghouse report on Head Start, 1968, led to a "national debate" (Hellmuth, 1970) that continues. Meanwhile, what might be termed the side effects of Head Start, including such changes as the increased involvement of parents in school and community affairs, and the improved availability of health and other services have been examined (Kirschner-Associates, 1970). Follow through programs of differing kinds have been put into operation. Research designed to compare the relative effectiveness of different curriculum models is underway (Planned Variation, 1971). By the end of 1971, the available evidence from a number of evaluative and comparative studies of Head Start and other experimental programs had been reviewed several times. (See for example, Datta, 1972; McFadden, 1970; Miller, 1972; Stearns, 1971). The research problems were given major prominence in Volume 3 of the Disadvantaged Child, edited by Hellmuth, and also in the 1972 Yearbook of the National Society for the Study of Education.

Stearns (1971) in a report to the Office of Child Development, summarizes the evidence succinctly. She notes that, over the short run, public preschool programs have been successful in changing the intellectual and social behavior of disadvantaged children in positive directions. In small scale expertly staffed experimental programs, the improvements in measured intellectual abilities have been even more striking. However, after several years the children who have had the preschool experience show no advantage as far as school achievement is concerned over those who did not have it.

Reactions to the "Failure" cf Early Intervention

These findings have brought forth a range of reactions on the part

of the researchers, policy makers and the public. Such reactions are, of

course, tied to the reactor's views of what is going on in other aspects

of our society, and to his theories of development and learning.

Accordingly they are more complex than are the three categories that I

am assigning them.

First, "let's abandon the effort₍ to extend public education downward." This reaction finds support in

current studies purporting to show that schooling makes relatively little

difference in adult status and income (Bane and Jencks 1972). Such a

reaction also finds some support among those whc have come to recognize

that many, if not most, of the preschool programs have been culturally

biased to a limited middle class view not only in goals and tests but

also in program content.

A second reaction is "put the responsibility for early education

back in the home where it belongs." This reaction receives support from

the finding that the most effective experimental programs have been

characterized by parental understanding of program purposes and by enlistment of

the mother as a teacher either in the classroom or the home. Research in

infancy is also called on to support this view.

A third reaction comes from those with a so-called "traditional"

nursery school view. It says, "let's take the cognitive pressure off

the preschooler and give proper attention to his social and emotional

development." This reaction goes along with the statement John Anderson

made about the content of preschool programs nearly twenty-five years ago. "It is not what the child learns in formal terms which is important, but what he gains from experiences in the way of self-control, emotional balance, initiative, interest, and enthusiasm for the material in question." Unfortunately, while it has been possible, albeit roughly, to measure cognitive gains, whatever social and emotional benefits have accrued in the experimental programs have been difficult to measure.

It seems to me unlikely that any of these reactions clearly point the direction early education, particularly that for the child between the ages of three and five is likely to take. It is true that kindergartens have only gradually been accepted as an integral part of public schooling and still have some way to go in that direction. But it is also true that, apart from the public schools, a variety of private, cooperative, and commercial ventures have made some form of early education available to many parents. An increasing number of less privileged parents have also enrolled their children in early childhood programs. From neither group, I think, is there any ground swell of opinion urging the abolition of available nursery schools, prekindergarten or kindergarten programs. Nor, I think, is there any demand that early education, whether for three-, four- or even five-year-olds should be made compulsory. But in both groups, I sense a growing conviction that a wider range of options for parents, as related to both education and care, is essential. Regardless of whether these options are provided within the public school system or are developed in the community and operated by the parents, there are any number of

persistent questions that can only be answered through research efforts.
Some of these areas of needed research require comprehensive planning,
beyond the scope of any single center, but others are more limited and could
be carried on by the staff and parents within a single center or group of
centers. We need the kind of research that helps us do a better job with children.

Strategies for Comprehensive Research

Carl Bereiter (1972), noting that, "existing technology already
enables us to teach young children far more than they can benefit from,"
suggests that what we need to do is to "construct articulated educational
programs that permit us to teach in the preschool what will be of use later
and to teach later what builds upon what was taught in the preschool."
He thinks there is little to be gained in research limited to the pre-
school level. Rather, preschool research should now be incorporated into
the programs of research at the elementary school level.

My colleague, William Rohwer (1972) takes a somewhat similar stand.
Drawing on his own research in verbal learning he proposes a strategy for
establishing how and when a particular skill or particular content can
be learned with ease. The strategy involves cumulative research using
tasks that tap a psychological process involved in school learning; applying
these tasks, which should resemble but also differ from typical school
tasks, over as wide a developemental range as possible to determine
possible developmental shifts; experimenting to find the conditions for
optimal performance at different ages and with different kinds of children.
Instruction would then be planned in accordance with the findings.

This strategy has considerable appeal, and might lead to a revolution in instruction if the array of psychological processes involved in school learning could be readily identified. Rohwer underscores his intent to search not for ways of making children precocious but for ways of assisting them to be optimally effective. Some of his work so far has led him to suggest that formal schooling might well be postponed to age seven or even later.

The Developmental Context of Instruction

The importance of developmental investigation as an inherent part of any attempt to move from the psychology of learning to a program of instruction cannot be overestimated. As Sigel (1972) has pointed out, the human organism is made up of a variety of subsystems - perceptual, cognitive, language, sensori-motor and so on. The relationships among these systems appear to differ at different stages of development and instruction related to a particular subsystem may have different effects on other subsystems at different points in time. The cumulative effects of instruction in one subsystem may also depend on the nature of the contexts for learning at succeeding stages of development.

Sheldon White (1970) has outlined the matrix of developmental changes that occur between five and seven years. His evidence, drawn from many different fields, highlights the many respects in which the preschooler thinks, learns and generally responds differently from the older child. But the significance of the developmental characteristics of the 3 and 4-year old does not seem to have been very deeply explored by either program developers or educational researchers. While some program developers in the decade of the 60's

did try to identify the psychological precursors of academic achievement, many resorted to analyzing the components of academic tasks confronting children in first grade, and then teaching the components to the four- or even three-year-olds that were enrolled. As Kagan (n.d.) puts it, the "major criterion of existing curricula is the heavy emphasis on teaching verbal concepts and rules with minimal appreciation of the variety of concepts and rules and minimal acknowledgment that the child's developmental stage is an important determination in his ability to understand a new cognitive unit."

Only a few programs have taken a view of cognition broad enough to include attention to other than directed thinking processes. Yet it may be that, from a developmental standpoint, the fantasy and spontaneous play that characterizes this period and the opportunities provided for them may have as much bearing on later development as does instruction in directed thinking.

In this connection it is interesting to note that Vygotsky (1962), who in general saw the necessity for instruction "marching ahead of development and leading it, being aimed not so much at the ripe as the ripening functions," considered play in the preschool period "to provide a background for changes in needs and in consciousness of a much wider nature than instruction." In this period, he believed, "play is the source of development and creates the zone of proximal development."

A longer term view of development that encompasses not only the kinds of knowledge emphasized in Piaget's theory but also personal, existential and aesthetic meanings might considerably alter current notions of appropriate experience for the preschool period.

Progress in the Last Decade

To suggest that the scope of research related to early childhood education needs to be broadened and put in a more comprehensive developmental frame need not be to the derogate of the work that has been done during the past decade. The clear light of hindsight illumines the naivete of some of the early assumptions, and the clumsiness of some of the research designs. But one has only to contrast the essentially post hoc Westinghouse Study with the Planned Variation and ETS longitudinal proposals to sense the increasingly sophisticated approaches to research related to early childhood education.

The progress made is even more striking viewed in a longer time perspective. The 1947 and 1972 N.S.S.E. Yearbooks were both devoted to early childhood education. In 1947 Ruth Updegraff wrote, "We are still far from the goal of one or more systematic educational philosophies evaluated by research." Twenty-five years later Gordon (1972) and Soar (1972) reported in considerable detail not only how curricula based on differing educational philosophies differed in goals, but also how they differed in operation and in effects on the children involved. In 1947 Updegraff noted in conclusion to her chapter on research and curricula "that threaded through it is the evidence of interrelationships of behavior and of total

environmental effects." These relationships, she added,"greatly complicate the problems of the research worker." In 1972, Messick and Barrows again comment on such relationships, but propose a methodology for dealing with them. They spell out in considerable detail, the domains in which measurement must occur if che effects of a particular intervention or program are to be adequately understood.

In some of these domains measuring instruments are already available, in others they must be developed. One hopes for caution and reflection here, for it is quite clear that many of the inadequacies of the presently available research stem from the use of instruments that were not really appropriate for the uses to which they were put.

In any event, at this point in time it is not clear whether many large scale studies, involving many children, and the manipulations of many variables, will be funded. Even if they should be, research of a rather different sort is also in order.

Within each of the measurement domains outlined by Messick and Barrows there are many questions that need to be answered. In many instances, small scale studies, perhaps replicated many times, seem in order. Furthermore, many questions cannot be adequately answered nor will whatever answers are found make any difference to early childhood education, unless ways can be found to involve both teachers and parents in the research process.

Scepticism About Research

It is no secret that educational research, and perhaps most especially, early childhood education resarch currently faces a credibility gap. Parents, particularly those in minority groups, but many others as well, are not inclined to give permission for their children to participate in any experiments. Research has no pay-off where they are concerned. They are no more sceptical than are many of today's college students. Finally, despite the fact that many of today's early childh od teachers have been involved in various sorts of research, few of them are asking for more involvement. Nor does there appear to be much evidence that whatever involvement they have had is reflected in different or more effective teaching.

In 1967, following a decade that had been noteworthy for the number of research and demonstration programs, many related to early childhood, Goodlad and Klein and a group of associates visited and observed in some one-hundred-and-fifty kindergarten and primary classrooms across the country. They sought evidence as to how the reforms implicit in the research and demonstration efforts were reflected in the classrooms. They found little. A later study of nursery schools brought equally dreary results. My own informal observations on two coasts have pinpointed some classrooms that clearly do reflect what has been going on in research and in innovative programs in the last decade. But they have not led me to believe that their effects are more widespread than Goodlad and Klein found.

The reason research has not been more effectively translated into practice may have to do with the nature of the research enterprise, and perhaps with its funding. The available research technology makes it quite possible   to collect and analyze data relating to a multiplicity of variables in quantities unthinkable a decade or two ago. The data and its analysis take on a reality and meaning of their own, quite apart from the educational situations and problems they represent. The distance between the researchers and the researched widens. Perhaps it can be said that as the cognitive distance between the research and its intended consumer increases, interest in applying it decreases. One is reminded of the old story of the farmer who informed the county agent that he had no wish to try any new methods. He already knew how to farm better than he was farming.

Whether or not involvement, as a participant, not merely a subject, in research having clear relevance to the classroom or to the children, would improve practice and increase parent and teacher support for further research is, of course, an empirical question.

Reference to the "action research" that was popular in the early 1950's may provide some clues for answering this question, but circumstances then differ in many respects from those today. Today's technology, both for research and for education has advanced ar beyond that of the fifties. It is paralleled by even more spectacular advances in other areas, profoundly affecting our ideology.

Leon Kass (1972), in a recent issue of Science writes, "We are witnessing the erosion, perhaps the final erosion, of the idea of man as something splendid or divine and the replacement with a view that sees man no less than nature as simply more raw material for manipulation and homogenization." Hope, he thinks, "lies only in education, in a public educated about the ways and limits of science and enlightened in its use of technology." Further he suggests that the current lack of money for research gives time to rethink and reorder our priorities.

The situation with regard to early childhood education research is not dissimilar to that Kass describes for biological research. Funding is likely to be relatively limited. We too need time to rethink and reorder our priorities keeping in mind our concern for maintaining our humanness. What are some of the steps we might be taking?

Next Steps

We have only to look at what Messick and Barrows have identified as domains of largely unmeasured variables to formulate some of the questions researchers, together with parents and teachers, might investigate.

The Child and His Family

Consider first the child and his family. There should be no need to belabor the ethnocentric assumptions in much recent early childhood research and in many programs. With increasing awareness of the stereo-typing implicit in the nature of cultural deprivation, it may be possible to come to terms with the realit'es faced by parents in different groups and the specific nature of their strengths, their concerns and aspirations for their children as well as the specific nature of their relationships with them.

The notion of the "whole child" needs reconsideration, not as a cliché, but with a view to better understanding of the meaning of individualization. In the last decade many measures of cognition, many ways of looking at cognitive processes in young children, have been developed. Is it not time to examine more closely how such processes are reflected in the social-emotional behavior of the individual child as well as in his school tasks? Are assessment procedures to be limited to cognitive processes? What is a reasonable balance between time given to assessment, time given to instruction and time for the child to proceed on his own? Currently, at least in some parts of the country, and even as early as kindergarten as much or more time is spent in assessment as in instruction, with little if any time left for the child's autonomous investigation and learning, for him to find out who he is.

While one finds in the current literature of early childhood education, and in the research related to it, considerable emphasis on invividualization, case studies of young children revealing the nature of their individuality and its significance for their education are rarely encountered. Do we not need in the 1970's researchers who will work with parents, teachers and children to show now young Black, Chicano, Asian, Native American and other children from varying backgrounds cope with their widening world, much as Lois Murphy described Topeka children in the 1950's?

Ways also need to be found to get at the children's perceptions of what goes on in the classroom. It is too easy to assume that their performance reveals all they know or feel. How many times, for example,

have children presented a facade to the teachers such as that recently
reported by an anthropological observer (Burger, 1972). A group of
Spanish surname six-year-olds were being taught English in a behavior
modification program. They were not responding appropriately, giving
the teacher, for example, an orange when she asked for an apple. Once
the teacher left the room, however, the children with roars of laughter,
began an elaborate mimicry of the earlier task, first giving the
correct response to each object, and then chanting every possible wrong
name.

The Classroom and the Teaching

The classroom and the teaching each represent additional domains
for investigation. In recent research the curriculum model in use has
received major attention. Indeed, for a period of two or three years,
finding dimensions on which to categorize different curricula became a
preoccupation for many early childhood educators. Judging from the reports
of Gordon and of Soar in the recent N.S.S.E. Yearbook that preoccupation
has finally paid off, at least at the kindergarten and first grade levels.
Applying interaction analysis, adapted to identify both affective and
cognitive aspects and the sequences of teacher and pupil talk, to class-
rooms representing eight curriculum models, Soar was able to identify
three groups of classrooms within which the differences were not significant,
although the differences between the groups were significant. It should
be noted, however, that the variability within the classrooms representing
a single curriculum model was greater than the differences from model to
model.

The classroom processes revealed by the analysis were found to relate to the cognitive growth of the children. Greater teacher direction increased simple-concrete learning but at the expense of complex-abstract growth. Soar (1972) notes, however, that there are limits with respect to the amounts of pupil freedom, interaction and self-direction that are functional.

Soar's study, taken in conjunction with Gordon's analysis of the instructional theory underlying the various curriculum models raises a number of questions about curriculum, more about teaching.

Aside from the differing reliance they place on workbooks most of the curriculum models look surprisingly alike when seen in operation. Each has a similar array of toys, games and audio-visual equipment, plus the paint, clay, blocks, and in some instances housekeeping equipment that has been standard in the nursery school for years. Does this seemingly infinite variety of materials and equipment really enhance the children's learning? Or does it merely reflect the American propensity for conspicuous consumption? Clearly the teacher is under less pressure to intervene in the children's activities, if there are enough, or more than enough, materials to keep them busy on their own. But how do the children use the materials? What ones are essential? What is gained by adding others? Is it possible to have so many as to detract from both the social and the cognitive interaction of the children? May the teacher become so involved in the acquisition and upkeep and storage of curriculum materials as to lose sight of their essential purpose?

As Weikart (1972) has commented, the curriculum is for the teacher more than for the children. It may be useful to examine the elements of the curriculum that further the fulfillment of the teaching role as contrasted with those that may actually impede it. For it is the role of the teacher that is the major difference between curriculum models.

The Teacher's Role

None of the models assumes that the teacher is a mere bystander. The models differ, however, not only in the expected extent of the teacher's involvement with the children but more importantly in the cognitive demand that involvement places on her. Thus, Gordon's analysis of the models finds that the Engelmann-Becker model requires the least cognitive
          on the part of the teacher,
effort ∧and the EDC model the most. These extremes reflect the prevailing uncertainity as to whether the teacher is to be regarded as a professional who makes decisions, or whether, in terms of some of the current pressure for accountability, she is a piece worker who contracts to take a certain number of children through a certain number of tasks in a pre-specified time.

It is interesting to note that in some respects, particularly as far as the management of the group and of materials is concerned, the role of the teacher in the new models resembles that of the teacher in the traditional nursery school more than that of the teacher in the traditional elementary school. But, in general, the traditional nursery school

approach has not succeeded as well as the more innovative programs

when dealing with children in poverty areas. The difference, according

to Bereiter (1972) and others is that the traditional nursery school

teacher does not instruct. The "traditional approach," Bereiter says,

"does not represent a different way of teaching from those represented

in newer programs but simply represents a lower order of program, one

that is more custodial and less purposefully educational." "The true

issue," he adds, "is not how young children should be taught but

whether."

In contrast to this position, Weikart distinguishes between programs

that are custodial and those, like the traditional preschool programs

found on college campuses and originally envisioned for Head Start,

that are child centered. In these, the child initiates and the teacher

responds. When well implemented, he finds, these programs do as well for

disadvantaged children as other models. The crucial variable is the

teacher and the support she has.

Clearly, we need to know much more about the range of child initi-

ations and the variety of teacher responses to such initiations, that

is, more about the teaching process particularly at the preschool level.

Observational studies will help but are probably not sufficient. Ways

need to be found to reveal more than the teacher's responses. Are they

merely intuitive or are they guided by theoretical knowledge? It is

probably true for the preschool teacher, as Jackson (1969) reports for

the elementary teacher, that the ongoing demands of the classroom are too
intense for on-the-spot reflection. But this need not preclude an analysis
of the teacher's pre-planning in relation to what actually occurred, nor
perhaps more importantly, an analysis of her reflections on those
occurences.

Other questions need to be asked. For example, how does the
teaching done by parent participants, volunteers, para-professionals
differ from that done by the professionally trained teacher? Or d_es_
it differ initially and then come to resemble the teacher? Insistence
that at least one member of the team needs professional training seems
reasonable. But where are the data to show what the professional does
differently from the less well trained? Are the differences important
to the child's thinking and learning or may they merely reflect cultural
differences in child rearing practices that have no necessary consequence
to the child's eventual development? Obviously questions such as these
cannot be easily or quickly answered, but it is clear that we need to
look closely and carefully at the variety of strategies adults have
for teaching the young child, and give consideration to their effects
on him,

The fact that programs for three- and four-year-olds and to an
increasing extent those for five- and six-year-olds increasingly involve
the operation of a team raises additional questions about the teacher's
role. How much of her time is spent in interaction, not with children

but with other adults, and what goes on in those interactions? What

effect does this changing and expansion of the teacher's role have cn

her effectiveness with children and on satisfactions she derives from it?

In the past it appeared that many individuals who elected to

teach at the earliest levels, did so because they preferred working with

children to working with adults. Is this true at the present time?

The researchers appear to agree that teachers differ in how well

they fill the teaching role but they seem not to have asked what

qualities in the teacher make for a good fit with a particular model.

Would a good Engelman-Becker teacher also be a good EDC teacher and

vice versa? Put another way, are self-selecting and matching processes

at work, so that the teacher teaches well if the curriculum and the age

period is one to which she is cognitively and emotionally well adapted?

And what if the teacher is a man? The increasing involvement of

men in early childhood programs provides an excellent opportunity to

examine some of the assumptions that have dominated teaching at this

level. Has it been dominated by feminine conceptions and goals? Do

those who are consciously aware of sex stereotyping teach differently from

those who are more traditionally oriented?

The Institutional Setting

Investigation of teaching should also raise questions about another

set of variables, those having to do with its institutional setting.

Preschool programs are now to be found in many public schools, but they

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are also affiliated with a variety of community agencies, and in some
instances are relatively autonomous. Does the setting affect the teaching
and the program, and in what ways? The younger the children the less
amenable they are to the kinds of regulations that have come to
characterize many elementary schools. Are programs in schools more
constricted than those in other settings? What is the nature of the
interaction between the teachers and the administration? Does the pre-
kindergarten program tend to become isolated as it appears the kindergarten
did earlier or is it incorporated into the totality of the school?

Evidence related to questions such as these is particularly
important at this time when many people find persuasive the argument
that extension of public education downward can only result in the same
kind of bureaucratization that pervades elementary and secondary education.

Research and the Researcher

If bureaucracy is inherent in the public school system it is also
an inevitable concomitant of large scale research. Many of the questions
that I have raised here could be incorporated in a grand design, involving
many schools and centers, many children and many, many teachers in many
parts of the country. But we may be in a position to ask different and
better questions if we first pursue some of the questions we now have in
smaller ways, with the participation, not merely the cooperation, of
parents and teachers. When they are involved from the beginning, helping
to formulate the purposes of the research, considering the evidence to be

gathered, how it is to be validated, and how it is to be used, research
should take on new meaning, not as something esoteric but as a means to
the end of improved practice.

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