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ABSTRACT

Individual teacher behaviors, characteristics, and instructional methods make an important difference in what and how well students learn. Children enter school with a wide variety of differences in family background and aspirations, expectations, and previous learning. Research on learning in the home, nursery school, and kindergarten points out the differences between the learning environments of school and home settings, and differences between teachers' and parents' expectations and approaches to teaching. Once in the school environment, the student encounters a variety of instructional styles and classroom expectations in teachers which often pose problems as they move from class to class or grade to grade. In addition, a student's background may conflict with the general school culture or that of a particular teacher. In this paper, which discusses current trends and research on this topic, questions are raised about instructional practices such as tracking, pull-out instruction, and ability grouping on the grounds that they often create difficult teaching/learning situations. The general effects of teacher expectations on student performance are discussed with suggestions for improvement. (JD)

What is Learned in Schools:

Responding to School Demands in Grades K-6

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Introduction

What students learn, how quickly they learn, and how much they remember depends upon their previous learning and the academic skills students possess when they enter public school. The particular school a student attends and the teachers and groups of students that he or she encounters are also important. Although some critics have argued that most schools and teachers are similar, I will demonstrate in this paper that what a student learns is substantially affected by the particular classroom he or she is assigned to.

It will be argued that what is learned in schools varies from individual to individual and that individual learning is influenced by the social period during which students attend school. That individuals learn different things in schools will be argued more formally subsequently and it will be contended that what students learn is influenced by skills and attitudes that students have when they enter first grade as well as by the particular teacher and students that individual students have contact with in schools.

It is clear that some students master considerably less academic content than others and indeed, master less material than expected. Unfortunately, some pupils fail to master even rudimentary skills, concepts, and processes. Other students leave school having achieved few of the affective goals that some schools strive for. Many high school graduates take jobs or enroll in college without having developed desirable work habits (ability and interest in engaging in and evaluating self-initiated projects, thoroughness, pride in personal scholarship). Most students enter school without the ability to read and acquire this valuable skill, some read skillfully when they enter school, and still others never learn to read well, though they receive several years of reading instruction. (For empirical evidence on variability in student learning one need only consult National Assessment data.)

What Schools Teach

It is difficult to generalize about what is learned in school. Although I perceive this to be a complex and problematic topic, some educators have found it relatively easy to describe what is learned (or perhaps more accurately what is not learned) in schools and to provide general solutions to educational problems (e.g., Silberman, 1970; Kozol, 1969). However, Apple and King (1977) challenge Silberman (1970) and others who decry the fact that schools serve institutional as well as personal goals or norms and contend that schools were in part designed to teach what some call the "hidden curriculum" (e.g., the tacit teaching of social and economic norms to students).

Apple and King further suggest that it is not just school critics who depict schools too simply. They note that all too often the social effects of school experiences are described as uncomplicated by

sociologists of education, educational psychologists, and curriculum specialists. I believe that the design of educational programs has suffered from an inadequate analysis of the effects of educational processes on students as well as from the generation of relatively simple and general solutions for complex educational problems.

Simple Universal Solutions

A good illustration of a relatively simple approach to a complex problem can be seen in attempts to accommodate individual differences in learning styles. In a review of the major individualization techniques used in reading instruction during the 1900's--the scientific movement; the activity movement; grouping for instruction; self-selection reading; language-experience reading; individually prescribed instruction; computer-assisted instruction; skills management systems, and so on--Artley (1981) notes that despite many desirable features, the effectiveness of each of these techniques is seriously limited. Specifically, he claims that any program helps the reading problems of some students, but creates (or at least fails to respond to) difficulties for other students. Simply put, in their zeal to provide solutions, educators often over-respond to a "problem" so that certain issues are solved but new problems are created by the systematic application of a solution.

Many educational writers contend that school processes and norms are difficult, if not impossible, to alter and this is generally true (e.g., see Sarason, 1982). However, schools and teachers on occasion rapidly make major changes and such instances challenge the view that school practices can be altered. For example, in the late 1960's it was popular for reading journals to decry students' lack of decoding and word attack skills. The "attack" on this

limited and simple problem (all students need phonetics skills) was systematic and "successful" in changing practices in teacher education programs and in classrooms. In fact, the solution was so "successful" that many critics of reading instruction today argue that there is too little attention to comprehension and silent reading and too much emphasis on phonics and isolated skill instruction, especially for "weaker" students.

In part, progress in education has been slow because problem analyses have been too narrow and have not accounted for the diversity of instructional conditions in American schools. Answers to most educational problems have been one-variable solutions (e.g., include more phonetics instructions for all students . . . reduce structure for all students by creating open classrooms). However, I believe that there are very few general issues in education that can be solved so simply. For example, some classrooms are over-managed and others are under-managed, and calls for more time on task will inevitably create problems in classrooms that are over-managed. Likewise, advocating for more open classrooms and less structure will cause new problems in under-managed classrooms.

Another factor which impedes the solution of educational problems is that techniques that work in one setting with one group of students do not necessarily work in another setting with another group of students, even for the same teacher. Good and Stipek (forthcoming) note that societal change may alter the effectiveness of particular instructional procedures. A teacher who teaches reading in 1980 the same way (with equal thoughtfulness and energy) as he or she did in 1960 may obtain different results from students because of the effects of television on readiness skills, shifts of school boundaries, changes

in the characteristics of the neighborhood surrounding the school, presence of mainstreamed children, and countless other factors.

Good and Marshall (in press) discuss the influence of societal views during various times in the 1900's on the "desirability" of an educational practice. They note that early studies (1920's-1930's) of the effects of homogeneous grouping on high and low ability students resulted in conclusions that are different from the findings of more recent research. Earlier studies suggested that students most likely to be "victimized" by ability group assignments were high students; more recent research indicates that low ability students are most likely to be negatively affected (although studies at any time have produced mixed results).

Perhaps the most important difference between school practices in the 1920's and more recent ones is related to the fact that in the past there were many socially acceptable options available to students who did not complete high school or college. There were apprentice programs for plumbers, electricians, bricklayers, etc., which enabled students to leave school and find meaningful employment. Assignment to a low group probably did not have the negative consequences that it may have had subsequently, when high school graduation became virtually mandatory and a college degree was required for certain forms of satisfactory employment. Both students and teachers in the 1920's may have perceived consequences of assignment to low groups less negatively and this might explain why earlier research indicated that in some instances low students actually benefitted from assignment to homogeneous groups for instruction. Furthermore, the retention of students who failed to achieve satisfactorily was a much more common practice in earlier times. The low achievers present in classrooms

during the 1920's probably vary considerably from low achievers of today.

Furthermore, the average number of pupils in a classroom has varied considerably from time to time in this century. Discrepancies in findings of studies conducted at various times may therefore be due to classroom size, the availability of curriculum materials, or many other factors. Conclusions based on studies which are more than ten years apart appear to be precarious.

What Do Students Learn?

I believe that any attempt to answer the question, "What do students learn in school?" should be restricted to a very limited time period. To illustrate the evolving role of schools, we might examine the old educational song:

> School days, school days,
> Dear old golden rule days,
> Reading and writing and 'rithmetic,
> Taught to the tune of a hick'ry stick.
> I was your queen in calico,
> You were my bashful, barefoot beau.
> You wrote on my slate, "I love you so!"
> When we were a couple of kids.

I suspect that girls of today wear jeans much more often than dresses, and that teachers who use the hickory stick are likely to end up in court. In a variety of ways the distinctiveness of schools, their legitimacy, and power have changed over time. Describing what students learn at a given point in time in a particular school is an exceedingly difficult task. Describing what students generally derive from school is an impossible task!

Goals of the Paper

In this paper I will emphasize that if one is to understand schools it is necessary to view learning as a social as well as an instructional event. Also, the complexities of the classroom,

general issues of learning, the student role, and learning how to learn in schools will be addressed. Readers interested in more detailed treatment of the general socialization effects of schools can consult other sources (e.g., Dreeben, 1968; Florio, 1978; Apple and King, 1977; Kanter, 1972).

In examining the broad effects of schools on student achievement, I will argue that individual teachers can and do make an important difference in what and how well students learn. Some teachers are more effective than others in presenting instruction or in establishing conditions so that students can learn on their own. I will also analyze teacher behaviors and instructional differences that are associated with student achievement.

I will examine difficulties that students encounter when they enter school (in part because of previous socialization) and as they move through school. As will be illustrated later in the paper, teachers' instructional styles and classroom expectations vary widely, and I believe that some of the variation between teachers is so pronounced (and unexplained to students) that it poses problems for students as they move from class to class or grade to grade. Furthermore, a student's background may conflict with the general school culture or with those of a particular teacher. Acceptable language and modes of behavior vary from teacher to teacher and even from activity to activity within the same classroom. Part of becoming a competent student is developing and demonstrating the social style appropriate to a particular context, as well as learning academic material.

Certain instructional practices such as tracking, pull-out instruction, and ability grouping often create difficult teaching/learning situations and the desirability of these educational plans will be questioned

in the paper. I believe that these practices tend to lower both teacher and student expectations and lessen the intensity and persistence of their efforts during instructional activities. The general effects of teacher expectations on student performance will be explained, and suggestions will be made about the need for accurate teacher expectations and active classroom instruction.

I cannot provide simple answers to questions and issues such as the following: What is the nature of the work children perform on behalf of meeting the expectations of the school's curriculum? How are children engaged in work (taught) during elementary school and how do teachers provide experiences which students need? How can children's beginning schooling be characterized? These and other reasonable questions have no simple answers because school experiences and expectations vary from setting to setting, from student to student, etc.

Influences of Parent and Home

As children leave home and start to school, they must adjust to the demands that schools place upon them. That is, to profit from schooling they must learn how to "go to" school and how to do "school work." In this section of the paper I will discuss the nature of "home learning," nursery school learning, and learning that takes place in first-grade classrooms. Some of the general expectations that confront a child in these three settings will be contrasted.

We know that childrens' interest in, and skills relevant for, academic scholarship begin to develop long before they enter school. Many educators and researchers have attempted to identify family practices (from symbolic appreciation for learning to actual parent instructional behaviors) which contribute to early acquisition of basic

academic skills. In particular, many studies have focused upon students' interest in reading because of the importance of reading to all school subjects. Durkin (1966) found that parents of early readers reported a much stronger interest "in print" (interest in looking at books, etc.) among their children than parents of non-early readers who were matched on other characteristics such as IQ and SES. Unfortunately, these data do not explain how students become interested in print in the first place.

Other researchers have assessed parents' perceptions of their children's interest in print and knowledge. Hiebert and Coffey (1982) studied parents' views of their young children's print-related development by asking fathers and mothers (individually) to predict their kindergarten children's performances on measures of knowledge and interest in print. While fathers' and mothers' estimates did not differ significantly from one another, both groups significantly underestimated their children's performances on the knowledge of print measure. On the interest in print measure, parents overestimated their children's performances. Although boys and girls scored very similarly on both measures, parents' predictions differed according to gender of child, with parents of boys giving lower estimates than parents of girls.

Others too have noted that young girls do not have superior language skills when they enter school. After reviewing the literature on differences in oral language acquisition related to gender, Macaulay (1978) concluded that the stereotype that girls have a greater propensity for language and acquire it more quickly and fluently is not empirically supported. Rather, studies suggest that boys are as interested and capable with regard to print as girls, at least when they begin school.

However, data on actual school achievement indicate that girls' achievement in reading and verbal skills (as well as other curricula areas) far surpasses that of young boys by the end of first grade and throughout the elementary school years (see for example the norm data associated with the Iowa Test of Basic Skills (Hieronymus, Lindquist, and Hoover, 1982). Unfortunately, adolescent girls' achievement in certain subjects declines. In part, females' early achievement in reading and their relative decline in performance in some subjects later appear to be due to parental, societal, and teacher expectations.

Parsons, Ruble, Hodges, and Small (1976) suggested that parents and teachers have different expectations for boys' and girls' performances in schools and that these differences eventually influence children's self-expectations and actual achievement. Indeed, there is some empirical evidence to suggest that in some classrooms teachers appear to interact with students in sex specific ways. For example, Leinhardt et al. (1979) found that boys received more favorable treatment in mathematics; whereas, girls received more favorable instruction during reading. It seems clear that students' academic learning may be influenced by social experiences and expectations that are held for them by significant others. Although only sex-related expectations are discussed here, this discussion demonstrates that when students arrive at school their previous socialization virtually assures that their interest in school and in particular subjects will vary widely. Such dispositions can affect achievement unless teachers actively counter them through instruction.

Do parents' beliefs and expectations determine children's interests, or do parents' beliefs merely reflect their awareness of interests that their children have formed independently? It is virtually impossible

to separate antecedent from cause in social influence situations because so many variables occur simultaneously and one participant's behavior is always affecting the others'. Although parents (and teachers) have more control and resources, parents' behavior is influenced by the behavior of their children.

As Hiebert and Coffey (1982) noted in their study comparing parents' perceptions of children's interest in prin:, one difficulty in specifying the relationship between parents' expectations and children's performance is that the process is interactive and the influence is mutual. For example, parents form some of their beliefs about children's interests and capabilities by observing children's performances and by listening to them. However, the data in this study suggest that parents may have some preconceived notions related to gender and developmental status, regardless of the characteristics of individual children.

It is instructive to see how parents can underestimate or overestimate performance. Given the complexity of a classroom and the need to make judgments about numerous children, it is easy to understand how teachers may misjudge certain students.

McGillicuddy-DeLisi (in press) discusses a number of studies which indicate that children's performance on intelligence or achievement tests varies according to family characteristics such as socioeconomic status. She argues that these studies have generally shown that constellation factors (sibling size and birth interval or ordinal position) are inversely related to children's cognitive performance. Interaction effects between socioeconomic status and family constellation have often been obtained, with constellation effects being more marked for families with lower SES backgrounds. Studies of the influence of family

characteristics on children's development have been criticized, however, for failing to specify processes through which the environment affects children (see for example, Bronfenbrenner, 1979).

To improve upon some of the weaknesses of earlier studies, McGillicuddy used both observational and interview methods to explore relations between parents' beliefs about children and their behavior toward them. One-third of the families consisted of only one child who was three to four years old, and the remaining 80 families had three children with the second-born preschool age. Half of the three-children families evidenced near spacing (fewer than three years) between first- and second-born children, and half had far spacing. Within each family constellation group, half the families were characterized as working class and half as middle class, based on education and income of parents.

Children in this study were asked to learn two laboratory tasks that their parents taught. It was found that what mothers believed about how children develop predicted their child rearing behaviors in two different contexts, even after demographic characteristics were taken into account. Also, fathers' beliefs about child development scores were related to their behaviors during interactions with their children after taking into account family constellation and socioeconomic factors. These data provide evidence that parents' beliefs about child development may guide how they interpret and react to children's behavior.

Many researchers have recently begun to explore parents' influences upon children. Perhaps the major lesson learned from such research is that it is exceedingly difficult to study family influences on children because so many variables are involved. Sigel (in press)

expressed the problem this way: "To return to the geographical metaphor, the terrain is being mapped more accurately than has been the case. What we have also discovered in our mapping efforts is that there is a considerable gap between the models of family functioning and the methods by which to study the models."

Perhaps the most general finding from the growing parent-as-educator literature is that young children who frequently look at books and have books read to them, and who have a chance to verbalize content are more likely to remember it (and thereby possess the capacity for using information and words) during their attempts to read. For an empirical illustration of the desirability for parents to encourage verbalization, see Hess et al., 1979.

Between Home and Preschool

Children assume different learning styles in the home; as a result, both of their innate capacities and early experiences as well as parents' instructional beliefs and behaviors. How well do parents' beliefs and behaviors match those of preschool educators? I stated previously that many (but certainly not all) parents and preschool teachers hold somewhat lower expectations for the reading ability of young boys than girls. What else is known about the match between parents' beliefs and those of the "preschool"?

Young children in American society are exposed to a wider variety of socializing agents today than at any time previously. The child-rearing role of the family is now shared with at least two other major sources of influence--television and preschools. Each of these socialization influences--family, television, and preschools--has been studied independently, usually as a potential source of influence upon

social or intellectual development. According to Hess et al. (1979), there has been little comparative research, and knowledge of how these three influences differentially affect the cognitive and social development of young children is incomplete.

Calling for more integrative socialization research, Hess et al. compared the differences between parents' and preschool teachers' behavior toward children in order to look for discontinuities between the experience of the child at home and at the preschool. They argue that disparities may or may not present problems of adjustment for a child or parent, but that one needs to know about differences in order to make judgments about the effects of particular discontinuities.

The authors note that there are reasons why one might expect mothers and teachers to differ in their goals, expectations, and behavior toward young children. First, experienced teachers have had more contact with a variety of families and children and have more time for planning instruction. Furthermore, the values and practices of the child care profession are transmitted to teachers in training programs and literature. Third, materials used in training frequently urge teachers to adopt behavior that offers children freedom to choose their own activities, follow their own interests, and make their own decisions. One can reasonably question, then, the relationship between beliefs that are communicated to teachers in trainting programs and those of parents. Also, the settings in which teachers and parents interact with their children are likely to be different.

Hess et al. point out that the settings in which mothers and teachers interact with young children differ in several important ways and argue that these disparities in social context are another potential

source of dissimilarities between those two types of care givers. They note that preschool teachers deal with children in groups; there are a relatively large number of contacts between children and adults; and the relationships between staff and children are transitory. Also, staff behavior is constrained and corrected by norms of the center and by federal, state, and municipal regulations. The physical environments of the preschool and the home differ considerably. In general, the resources of the center are selected and arranged for the benefit of the child while the home is organized to serve a wider range of functions and needs of a family group. Centers encourage a style of regulating and interacting with children that is oriented toward groups. The needs of an institution for a predictable daily schedule (lunchtimes, naps, etc.) are arranged in order to serve group needs. Yet another difference between mothers and teachers is the personal relationship they have with children in their care.

The sample used in the Hess et al. study was recruited through preschools and child care centers in the San Francisco Bay area that utilized a variety of instructional approaches. Sixty-seven mothers and their first-born children participated in this study. All were Caucasian, fourteen were single parents at the time the study began, mothers ranged in age from 20 to 35 years, and the families represented a wide range of socioeconomic backgrounds.

Several general patterns resulted from the comparison of beliefs and behaviors of others and teachers (mothers and teachers were observed teaching a standard task to a child): (1) Mothers and teachers hold similar goals for children, although mothers tend to emphasize pro-social skills more and independence less, than teachers; (2) mothers press for mastery of developmental tasks at an earlier age than do

teachers; (3) mothers teach in a style that is more direct, demanding, and explicit than do teachers; (4) mothers appeal to their own authority in obtaining compliance; teachers invoke rules more often; (5) teachers tend to be more flexible in implementing their requests for compliance. The following incident provides an example of how general differences in teaching behavior between mothers and teachers were manifest.

Mother: I want the one that isn't finished . . . that someone took a bite out of like . . . but a pretty big bite. Can you push that button?

Child: Incorrectly pushes the button under the half-circle.

Mother: No. That's too much. That's not enough of a circle. Compare this behavior with that of the teacher.

Teacher: Can you find the circle that's open at the top? There is no line at the top.

Child: Incorrectly pushes button under the half-circle.

Teacher: That . . . . oh that's good. But it's the one that's got more lines on it.

The mother's feedback included explicit feedback that the choice was incorrect, while the teacher accepted the response and only implicitly informed the child of the error by use of such words as "but" and "more."

Also, note that the teacher provided praise for an incorrect response. Many teachers (unlike most parents) find it difficult to tell a child that he or she has made a mistake. The norm in many school settings is such that effort and not the quality of work becomes the experience.

These differences in teachers' and mothers' styles of interacting with young children are generally congruent with disparities that appeared on self-report instruments . . . developmental goals for young children, press for mastery, and use of control strategies. This consistency across dissimilar measuring devices and separate testing occasions indicates the reliability of the data-gathering procedures used to validate the measures indicating underlying patterns of behavior toward young children.

Hess et al. conclude that the specific instances of behavior and attitudes reported are not isolated, but indicate a consistent pattern of child rearing and socialization. These measures correlate with other attitudes and characteristics. They also vary according to socioeconomic background, but a separate analysis reported elsewhere (Hess, Dickson, Price, and Leong, 1979) confirms that these differences between the two groups are not related to SES disparities between mothers and teachers.

In related research, Winetsky (1978) illustrates that compared with mothers, teachers prefer preschools which offer unstructured settings where activities are chosen and directed by children rather than organized and directed by adults. Behavioral observations by Rubenstein and Howes (1979) of mother and child-care workers interacting with infants support Winetsky's results. They found that child-care staff touched the infants more in non-care-giving situations, engaged them more often in playful activities, and were less often restrictive than were others interacting with their infants at home. There is therefore evidence that mothers are more direct teachers and managers of instruction, and that mothers believe that teachers are too indirect and too flexible in their behavioral demands on students.

However, there is growing evidence to suggest that the study of instruction in the home is at least as complicated as studying school instruction. Chall and Snow (1982) provide an interesting example of this point. These investigators, working in relatively low-SES schools, identified students who were relatively poor and good readers. It was their intention, then, to study the homes from which relatively poor and good readers came in order to see if there were systematic differences in home environments (e.g., appreciation of print, resources) that might help to account for differences in students' reading abilities. Interestingly, when the investigators visited the homes of students who had been identified as good readers, it was not uncommon to find a sibling who was a relatively poor or mediocre reader. Similarly, when the investigators collected data in the homes of students who had been identified as relatively poor readers, it was not uncommon to find that there were siblings in the homes who were relatively good readers. At a minimum, these data suggest that the variation in students' reading ability showed about as much variation within families as between families. The causes of these differences are not clear. It may be that students in the same family develop different reading abilities because resources (time and energy) are allocated differentially to children in the family. Alternatively, it may be the case that children read at different levels, not because the environment is different for them, but because they react differentially to similar opportunities. It seems plausible to infer from these data that children from the same home enter school with different abilities for, and different interests in, reading and probably in other subject areas as well.

The conclusion that students arrive at school with dissimilar interests and abilities may be seen to be a relatively common sense observation

at first glance. However, it is clear that many educators, sociologists, and psychologists implicitly suggest in their writings that the home environment, a particular SES level, and other status variables lead to rather predictable problems and conditions that educators need to acknowledge and respond to. As a case in point, it is not uncommon that teachers expect and to some extent, will treat children on the basis of their knowledge of and interactions with older siblings. Seaver (1973) conducted a natural, quasi-experiment to see if the achievement of 79 siblings in first grade was affected by the previous achievement patterns of older siblings. The hypothesis tested was that students would achieve better when taught by the same teacher if the older sibling had been a good student and worse when older siblings had been poor students (in contrast to control students who had a different teacher than the older sibling). It was found that following a sibling who was a good student had positive consequences upon achievement for younger siblings, especially males. It is not entirely clear how teachers' perceptions of home conditions influence their actual behavior, but it does seem possible that some teachers may inadequately assess the potential of students by over-using "status" factors (home background, older siblings, etc.).

Nursery School: A Case Study

To examine more fully the similarities and differences between home and school, I shall describe one particular nursery school in detail, the type of demands that it places upon children, and how closely the expectations meet those of parents. The description presented here is from Kanter (1972). It is a detailed case study and the general climate of the school is similar to that characterized in the Hess et al. findings.

Kanter contends that in many ways the nursery school functions as a small bureaucracy by preparing students for these structures in later life. She notes that there are few risks for individuals associated with the bureaucratic organization; clear rules and procedures eliminate uncertainty and insecurity even in decision making. However, bureaucratic organization concurrently may devalue individualistic enterprise. An emphasis on appropriate bureaucratic behavior is a liability rather than an innovation, because stress is placed on fitting in and getting along rather than achievement. She notes that, compared to other kinds of schools, nursery schools have a large amount of freedom with which to operate. Nursery school attendance is not required under law and there are no particular tasks these schools must perform. To at least one of the parents whose children attended the school described here, the purpose of nursery school was nothing more than giving children an opportunity to play with others in their own age group. For others, the goal is a very vague one, "more knowledge about the world." Many of the parents felt that the nursery school had fulfilled its responsibility if their children returned home "kind, courteous, and cheerful." Considering these divergent parent opinions, the nursery school implemented its conception of an appropriate set of experiences for the child. This involved dealing with children and structuring the environment so as to limit experiences seen as "anxiety-producing." The result was a world which was phenomologically more like a bureaucratic organization than a nursery school, with its non-instructional emphasis.

In particular, the experiences which the nursery school provided can be characterized in the following ways: (1) limiting uncertainty (providing explicit rules, procedures, defining relationships,

expectations and appropriate behavior); (2) limiting strangeness (minimizing change . . . introducing new routines or songs and games slowly); (3) limiting mystery (presenting the world as rational and mundane as opposed to inexplicable, fantastic, frightening); (4) limiting coercion (by permitting the child as much freedom of behavior as possible and by disguising use of power in cases when it was necessary to control behavior); (5) limiting accountability (the child was not considered responsible for any deviant or anti-social acts, aggressive behavior was attributed to carelessness or accident); (6) limiting unpleasantness (this nursery school, probably like many others, did not want children to engage in unmotivated behaviors--teachers attempted to make everything fun for the children, even potentially unpleasant events, by making them into games or insisting on their pleasurable aspects); (7) limiting peer conflict (the school de-emphasized competitions--there were no gold stars, no prizes and no winners--no child was considered better than any other and no child any worse or less deserving; teachers attempted to maintain strict equality with respect to privileges and possessions; by providing a large number of toys and a variety of activities the teachers hoped to avoid conflicts over scarce resources).

Kanter maintains that the "organization child," like the organization man, is asked to accept organizational reality, adjust to routine, take on a limited rather than diffuse obligation to the organization, and guide his/her behavior by impersonal, universalistic principles. She argues that the school discouraged the development of personal responsibility. Because the teacher consistently said that some aggressive act was an accident, the children came to believe that they were not responsible for the act. Kanter states that the children became

very adept at insisting "I didn't mean it," thereby absolving themselves from responsibility. Further, she argued that the school provided motivation for the children by making things fun. The organization children therefore need experience no inner compulsions to be moral, to participate, to cooperate, or to help keep the enterprise as a whole running smoothly; it was only their responsibility to look out for themselves. This was the four-year-old equivalent of the "minimum acceptable performance." For example, the children often followed on the most general procedural requirement, such as being present in a particular room at a specific time, but they then participated in group activities or paid attention to the teacher only if they felt like it.

Despite the school's intentions to reduce status differences by eliminating competition and establishing norms for sharing and equality, children still competed, in many cases to establish a superior social position. Sometimes this was done through "conversion," by identifying with the teacher and correcting other children and reminding them of rules. There was also one-upmanship: "I have an X . . . I have a bigger X . . . or a newer X," and so forth. Even norms of sharing and equality were often used to a child's advantage. For example, a child might bring a possession from home and overtly share it with others but remind them constantly of his munificence.

Different preschool programs no doubt respond to the needs of young children and instruct them in diverse ways. No doubt some programs stress the importance of personal, internal realities and value unique and personal human behavior. Schools which emphasize these notions would avoid prestructuring situations so that children could build internal resources. Such schools would deliberately create uncertainty so that self-definition could occur, make children responsible

for their behavior, and would view a small amount of anxiety as promoting growth.

Kanter has correctly noted that the representativeness of this particular school is unknown. For example, my daughter is enrolled in a nursery school in which parents have to help (on a rotating basis) in the school program. This arrangement assures that home teaching and school teaching will necessarily be closer than is often the case. Although the children have many free choices in this school, they also have a basic, daily structure in which behavioral routines are normalized and certain skills and expectations are taught: One regular feature of this instructional program is that the teacher holds a show and tell in which three-year-olds are expected to listen, take turns, and to participate in a common school ritual. Teaching turn-taking skills ("Listen, you can share your story in a minute," "Don't take too long, everybody wants to talk," "Thanks for thinking of something that everybody would want to see") to a group of three-year-olds is incredibly difficult. Although these young children have not perceived all of the cognitive aspects of turn taking, it is the case (now after several months of warm but persistent teaching) that these children as a group have learned the ritual well and are competent and enthusiastic about show and tell and turn-taking activities. Although the wisdom of teaching this skill in nursery schools is debatable, I would argue that its effect is not problematic. That is, as will be shown later, students who can wait, listen, and participate (in socially relevant ways) are apt to be placed in higher reading groups than are students who are as bright but who appear to be less socially mature.

Although it is possible to find examples of many nursery schools that are more demanding, it still seems plausible to suggest that the nursery school experience described by Kanter is similar to what many students encounter. Indeed, I believe she has described the typical nursery school setting. The "work of nursery school" as it occurs in the school described by Kanter differs substantially from the beliefs that many parents hold about how children should be instructed. Thus, the gap between home and nursery school is an abrupt experience for at least many children who go from direct teaching to more indirect teaching (and in some cases to laissez faire teaching).

Kindergarten

Apple and King (1977) contend that kindergarten serves as a foundation for the years of schooling that follow, and that elementary school children who have attended kindergarten generally achieve better than children who have not attended kindergarten. However, they note that attempts to determine exactly which kindergarten teaching techniques and learning experiences contribute most directly to later achievement have not proved fruitful. They suggest that kindergarten training appears to exert its most powerful, lasting influence on the attitudes and the behavior of the children by acclimating students to first-grade environments.

They report observations and interviews of participants in one public school kindergarten class. They argued that in this class the socialization of children was an overt priority during the opening weeks of school. The important skills that the teacher expected the children to learn initially were to share, to listen, to put things away, and to follow the classroom routine. Thus, her statement of her

initial goals for the children also constitutes her definition of socialized behavior in the classroom.

Children had no part in organizing classroom materials or in making decisions, and the teacher made no special effort to make the children comfortable in the room nor to reduce their uncertainty about the scheduled activities. Note how this contrasts with the nursery school described by Kanter, where teachers tried to reduce children's fear of uncertainties!). Note also how this differs from my daughter's nursery school experience where students were getting demands for listening skills; b unlike this kindergarten class, my daughter's nursery school class was also getting the chance to make decisions and choices. King and Apple note that rather than moderating or changing intrusive aspects of the environment, the teacher required children to accommodate themselves to the materials as presented. For example, when the noise of another class in the hallway distracted the children, the teacher called for their attention; however, she did not close the door. During most of the kindergarten session the children were not permitted to handle objects, materials, and were organized so that they learned restraint. They learned to handle things within easy reach only when permitted to do so by the teacher. They were also punished for touching things at the wrong time or not following directions in sequence. When one little girl forgot where her assigned cubby was, the teacher refused to permit a student teacher to label the cubbies. She told the student teacher that the children must learn to remember their assigned cubbies because that was their job.

In this classroom whole-class activities were stressed. Not only was every work activity required, but every child had to start at the designated time. The entire class worked on all assigned tasks

at the same time. Further, all children were required to complete the assigned task during the designated work period. In a typical incident, on the second day of school many children complained that they neither could, nor wanted to, finish a lengthy art project. When the teacher said that everyone must finish, one child who asked if she could finish next time was told, "You must finish now."

The products or skills which the children exhibited at the completion of a period of work were intended to be identical or at least similar. The teacher demonstrated most art projects to the entire class before the children got the materials.

Apple and King point out that activities in this class prevented students from developing any pride in the process of work per se. Diligence, perseverence, obedience, and participation were rewarded. These are characteristics of children, not of work. In this way, the notion of excellent was separated from that of successful or acceptable work and replaced by the criterion of adequate participation.

It seems strange that children generally receive direct teaching and explicit socialization in their homes then attend relatively unstructured nursery schools, and often receive unimaginative teaching directed at the entire class in kindergarten. Such a sequence of abrupt discontinuities in behavioral management and instructional expectations would appear to pose some problems for certain students (What is expected of me? Do I follow directions only or determine my own schedule?).

However, I must emphasize that kindergarten experiences vary widely (although from my experiences many programs are similar to the "everybody by the number routine" described by Apple and King. This variation among kindergarten programs is important and must be

considered in any analysis of first-grade students' prior schooling experiences.

Florio (1978) described a different type of kindergarten class. Her study is based upon a two-year investigation of daily life in a kindergarten/first-grade classroom. In contrast to the "everybody does the same thing at the same time in the same way" style reported by Apple and King, Florio found that a series of contexts for interactions comprised the day in this classroom. Two different kinds of activity were identified--whole-class, single-activity which is directed by the teacher; and more loosely organized, multi-focus activity in which the children initiate activity outside the direct supervision of the teacher. Hence, students in the class worked in multi-task settings (e.g., Bossert, 1979) and were able to develop and use a variety of social skills as well. Florio also found a general ambience in this classroom, in contrast to the rigid attitude of the teacher described by Apple and King (e.g., the teacher requests that the children ignore noise . . . but does not close the door).

Consider how the informal atmosphere and choice present in the classroom depicted below differ from the class described by Apple and King.

> On a morning early in September, the members of a kindergarten/first-grade class pursued their activities. The room was lively and open. Children worked in small groups on tasks of their own choosing--drawing, building with blocks, role playing in a kitchen area, playing games at tables. Ronnie, a first grader beginning his second year in the class, was playing with three peers. They were building a highway with wooden blocks to accommodate several small cars. Ronnie was a gregarious

boy, reputed to be a leader in the class. He was one of the teacher's favorites.

Nearby, the teacher was seated at a low table with three girls. They were playing with a three dimensional tic tac toe game. Two of the girls were first graders for whom the game was not very hard. Since the third, Maria, was a kindergartner, the older girls consented to play with only one dimension of the game and to allow the teacher to help Maria plan her moves . . . (p. 1).

Although the teacher is the locus of social control in the classroom, complexity of work time is jointly produced by teacher and children. Behavior of children influences the teacher's signaling of changes in activities. The primary means by which these shifts are cued are the movements of teacher and children and calls of the teacher's name. Changes in the behavior appropriate to the different contexts amount to changes in the enactment of status and role on the part of the teacher and children. Work time is further complicated by the fact that it is constituted by a loose coalition of student groups sharing limited physical space. Participants from work time are accountable not only to the teacher, but to one another in small groups as they complete activities.

In this class, being academically and socially competent entails knowing what context one is in, and what behavior is appropriate for a particular context. Since the activities and expectations are varied, the students have to learn subtle differences if they are to succeed.

Florio argues that going to school involves more than the mastery of academic content. Children must learn to become interactionally

competent members of the classroom community. Interaction is a social activity comprised of the verbal and nonverbal behaviors which people manifest and interpret in face-to-face encounters. It is a variable yet sufficiently ordered to be shared and passed on within communities. Talk, gesture, and use of phase organize meaningfully by subtle rules to which participants have been culturally conditioned. However, it is imperative to note that the differences in the two kindergarten settings described above are pronounced. Context differences across settings must be considered, as well as differences within settings. In the class described by Apple and King, students generally had to accommodate teachers' interests and needs. In the classroom described by Florio, however, children had to adjust to the demands of other students as well as those of the teacher. These two classrooms indicate that what one needs to learn to be competent and to do the work in kindergarten varies, depending primarily upon the particular teacher and school that a student is assigned to.

First Grade

Although some educators believe that school begins with kindergarten, almost all parents and educators realize that formal instruction normally begins in first grade. Instruction in reading is particularly important. What, then, is learned in schools at this level that is distinctive from what is learned at home? Dreeben (1968) states that "the school, then, is an organization embodiment of a major social institution whose prime function is to bring about developmental changes in individuals. It is an agency of socialization whose task is to effect psychological changes and enable persons to make transitions among other institutions; that is, to develop the capacities necessary

for appropriate conduct in social settings that make different kinds of demands on them and pose different kinds of opportunities" (p. 3).

This seems a reasonable definition until one questions the nature of these psychological changes (some parents want children to learn only basic academic skills; other parents want individual, creative, and unique responses developed). It is also difficult to specify the different kinds of "demands" and "opportunities" to which Dreeben refers. I suspect that Dreeben's definitions were much more appropriate in the early 1960's, when schools' socialization role was not shared with other child care agencies. Because of the increasing number of families in which both parents work, more young children today are attending nursery school or being cared for by adults other than their parents than in the past.

Although it lacks specificity, Dreeben's discussion of school functions is still useful. His work is an important reference because it provides an extended analysis of what is learned in schools. Dreeben acknowledges that not all families are alike; and he indicates that some have many children, some have few, some have children widely spaced in age while the children in others are narrowly spaced. Some have a parent absent : . . thus, depending on the actual family circumstances, there will be variations in the way children cope with the family situation and in the principles of conduct they learn to consider appropriate. Similarly, schools differ. Some are large, while others are small; some are graded, some are ungraded; some employ ability grouping, others do not; and teachers vary in their styles of instruction and discipline.

Dreeben notes that the structural characteristics of schools and families differ in notable ways. First, families are unitary in their

social organization in the sense that they lack formally defined subdivisions. On the other hand, school systems are divided into levels and within each level into classroom units. The number of individuals comprising the membership of classrooms is almost always larger than that of families. The second difference between home and school is that the school provides a unique experience in establishing and severing relationships with adults. That is, each year the child gets a new teacher(s) to interact with. The third difference is that both in terms of relative and absolute numbers of adults and non-adults, there are fewer adults per child at school than at home. Children thus have fewer opportunities for individualized interaction with an adult at school. Third, there is typically a much more rigid pattern of events in schools. School is cyclical in that nearly all instructional events take place during each five-day school week, and one week or one day is pretty much like another week or another day. Dreeben believes that schools are more heterogeneous than are homes. He further notes that affect is much more difficult to express in schools than at home. Also, classrooms are settings in which teachers are expected to avoid establishing enduring relationships with pupils premised on affections.

Another major difference is that the central aspect of schools is instruction, and teachers assign pupils specific tasks to perform and then assess the quality of performance. According to Dreeben, in the family the performance of day-to-day activities and emotional expression are equally important; both must occur if the members are to sustain themselves. However, the school's explicit purpose and official reason for existence lies in the area of instruction. The school is an organization concerned with the encouragement of activities in which children demonstrate how well they can achieve. In so doing, pupils

distinguish themselves from each other over a period of years on the basis of their achievement. Although teachers are likely to consider the quality of performance in the various cognitive activities most seriously (in recognition of their latter occupation importance), quality is not the sole criterion on which pupils are differentiated.

Dreeben notes that what is learned in schools can be summarized in four important acts: (1) children learn to act by themselves (unless collaborative effort is called for) and to accept personal responsibility for their conduct and accountability for its consequences); (2) perform tasks actively and master the environment according to certain standards of excellence; (3) acknowledge the rights of others to treat them as members of categories; (4) on the basis of a few discreet characteristics rather than on the full constellation of them that represent the whole person.

Like Florio, Dreeben stresses that much classrooom behavior is contextual in nature and students must learn how to distinguish one context from another. For example, he makes the important observation that the irony of cheating in school is that the same kinds of acts are considered morally acceptable and even commendable in other situations. For example, it is praiseworthy for one friend to assist another in distress or for a parent to help a child; and if one lacks the information to do a job, the resourceful thing is to look it up. In effect, many school activities called cheating are the customary forms of support and assistance in the family and among friends. Only in rare situations are pupils expected to not enlist the aid of family and friends in matters pertaining to work when that aid is appropriate.

Dreeben has described the modal aspects of schooling and how the structures of schools and the processes that take place in schools

differ from those in the home. His position is helpful in that it suggests that home and school do differ in important ways (e.g., adult-child roles; degree of affect). However, the development of new types of preschools makes this contrast less sharp than it perhaps was in the early 1960's. Furthermore, varied and sometimes contradictory demands of family, day care, or nursery school are no doubt confusing to some students. Some schools are permissive, unstructured, and allow students to express affect. Other schools hold minimal academic expectations for students. In such schools there is often less public evaluation than in certain homes (especially homes where parents frequently demand that their children play the piano, dance, etc., when other adults enter the room).

My purpose here is not to quarrel with Dreeben; indeed, his analysis is admirable. The point is that most who have written about schools, whether curriculum reformers (new math, open schools), humanists, general critics, or lay persons . . . all have tended to describe schools or problems in general terms. As I emphasized earlier in the paper, I find it difficult to conceptualize the "common aspects of schools" because the variance in educational settings is quite pronounced. Although it is not clear what impact the variations in school that I see and report on have on student beliefs and behavior, I do believe that there is considerably more variation in "school routine" than is commonly reported in the literature.

The perspective that a writer brings to the phenomena no doubt affects his or her interpretation of the literature. For example, in one earlier report to the Commission, John Goodlad noted that only a few of the many teaching styles that are possible are actually seen in the classroom. I agree completely with his observation; however, I would

add that the variation within these few forms are many and complex. What is critical is whether students perceive these "minor variations" and whether they influence student behavior and achievement. Unfortunately, we do not have data to answer this point and it is possible to present views of schooling as either highly similar or highly dissimilar, depending upon the importance one attaches to the variations in school form. The richness of recent observational studies has convinced me that schools and classrooms differ in important ways.

Culturally Different Students

All students experience some discontinuities as they move from home to school. Although the general language and expectations of home and school are different, they are often "interpretable" differences (e.g., a child is used to answering questions posed by adults, although the style of questions may be different across adults). However, the transition between home and school may represent major hurdles for some students (including bright, capable students) because the general expectations and process in the school differs radically from what students have experienced at home.

Au and Mason (1981) examined the social organizational aspects of classroom learning and found that poor school achievement by many minority children is related to the nature of teacher-pupil classroom interaction. These authors' interest in conducting research on teacher-led group instruction was in part based upon earlier research.

For example, Good, Ebmeier and Beckerman (1978) suggest that academic engaged time might be a more accurate indicator of the learning of low-SES students than of high. There is considerable evidence that the rate of students' academic engagement is higher when they

are being supervised by a teacher than when they are working independently (Stallings and Kaskowitz, 1974; Stallings, Cory, Fairweather, and Needels, 1977; Soar, 1973). Finally, individual instruction has repeatedly been shown to be less effective than either small- or large- group instruction, probably because other children grow inattentive if left unsupervised (e.g., Stallings and Kaskowitz, 1974; Stallings et al., 1977).

Au and Mason conclude from these studies that if we wish to increase the academic performance of elementary grade minority students, we should provide them with a substantial amount of teacher-group activity. However, they point out that these studies do not describe how the teacher should interact with students and allocate time during group instruction.

Au and Mason examined four videotaped reading lessons given by two teachers to the same group of disadvantaged seven-year-old Hawaiian students. One teacher (LC) had little contact in the past with Hawaiian children, while the other (HC) had worked successfully with Hawaiian students for five years. Consistent with the backgrounds, it was found that the two teachers managed interactions in their lessons very differently. Teacher LC used participation structures which were familiar to her but which were not familiar to the children. Indeed, the participation structures used in her reading lesson are commonly used with children from the mainstream culture; the major structure requires them to wait to be called on and to speak one at a time. On the other hand, Teacher HC conducted most of her lessons in a different participation structure, one which allowed the children to share turns in joint performance. This structure follows

interactional rules much like those in a talk story, a common non-classroom speech event for Hawaiian children.

In the "turn-taking" structure, only a single person (teacher or child) is allowed to speak at a time. All others must orient silently to the speaker in order to show that they are paying attention. If one of them wishes to speak, he or she must raise their hand and wait to be nominated by the teacher. Although individuals may not be consciously aware of the rules, these rules provide participants with certain communicational rights as well as constraints (e.g., Schultz, Erickson and Florio, in press).

The major difference between Hawaiian talk stories and mainstream classroom speech events is that the former entail a high proportion of turns involving joint performance or the cooperative production of response by two or more children, while the latter emphasize the performance of individual children. The authors stated that the children's responsiveness in the reading lessons resulted from their being permitted to build joint responses, either among themselves or together with the teacher.

Unlike talk-story sessions, reading lessons involved instruction. The teacher had to exert some authority over the group of children to ensure that their speech (during the verbally productive talk story-like structures) was channeled toward academic ends . . . although the content of their answers was almost always restricted to teacher-chosen topics, the form of their response, including many types of joint performance, was much less restricted. A child could reply independently of other children, receive help from others, and comment on, contradict, or compliment the answers of others.

Equal talk time was evident in the control exerted by the teacher using Hawaiian talk stories and the allocation of turns and time given to each participant to speak. Teacher nomination was used to equalize the distribution of turns among the children, but not in a coercive manner. Furthermore, the longest single utterance in the entire lesson was a narrative told by one of the students, not a teacher lecture. The equal time condition, then, applied to the distribution of talk not only among the children, but also between the teacher and the children.

Au and Mason found that in LC's, the highest proportion of time (61%) was spent in the exclusive rights-volunteer structure. The teacher-directions structure took up the second largest percentage of time (19%). Much less time was spent in the exclusive rights-non-volunteer structure and even less in the two student-initiation structures. In the lessons of Teacher HC, 41% of the time overall was occupied by the open-turn structure and 23% was spent in the primary rights-volunteer structure. A considerable amount of time (22%) was taken up in silent reading. The silent reading may be as important as the joint structure that the author chooses to emphasize. The teacher direction structure occupied 10% of the time, quite a bit less than in the lessons of Teacher LC. It was found that the overall rate of academic engagement was much lower in Teacher LC's lessons (43% of the intervals, as opposed to 80% in Teacher HC's lessons).

According to the authors, the results indicate that the social aspects of lessons are as important as the instructional academic dimensions. They also suggest that the procedures used in this study (and other qualitative studies) may be helpful in explaining problems of schooling identified in more quantitative studies. For example,

previous research indicates that low-achieving students are generally engaged in academic work for less time than high achievers (Good and Beckerman, 1978). Au and Mason suggest that qualitative studies (especially those that focus on the social aspects of classroom learning) offer some explanations for students' differing rates of engagement.

For example, McDermott (1976) demonstrated that top and bottom reading groups may constitute different interactional environments, directing the attention of the participants to divergent kinds of problems. In the top group, reading problems served as the basis for most of the teacher's responses to the children; in the bottom group, management, turn taking, and interruptions from children outside the group occupied much of the time.

Au and Mason further note that the work of Mehan (1979) indicates that discussion in conventional classroom settings generally involves a two- or three-part sequence (the teacher asks a question, a student answers, and the teacher may evaluate the student's answer). This sequence appears to be very simple; however, it may cause many problems for some children. For example, a child may need to know how to bid for a turn and wait to be called on rather than interrupting the turn of another student. Schultz, Erickson, and Florio (in press) suggested that some children might lack this kind of knowledge, because participation structures routinely used during specific phases of home activities differ from those used at comparable times in classroom activities. The data presented by Au and Mason suggest that the difficulties experienced by minority children in dealing with conventional classroom participation structures are likely to be much greater than those of other children. The culture of the school includes rules

for appropriate behavior in face-to-face encounters, and some participants are better able to respond to these rules when they enter a school setting than others.

However, it should be clear that to participate in instruction includes both academic knowledge and skills as well as social skills and knowledge. Competent students have both sets of skills.

Part II: Variation in Curricula and Quality of Teaching in Public Schools

In the first part of this paper I discussed variation in educational experiences students have before they enter public school. I argued that, at least for some students, there are sharp discontinuities in the demands placed upon them as they move from one educational setting to another. Public school experiences are often dissimilar to experiences young children have previously had. However, the disparities (increased child-adult ratio; increased public evaluation; etc.) between home and school are now fewer than they were in the past, because more children are currently enrolling in preschool programs. Even though preschools may ease the transition from home to school in some respects; overall, they may be more confusing than helpful at least for some students (i.e., they expose children to a wide range of behavioral and academic expectations. At a minimum, teachers and policy makers must realize that preschool or kindergarten attendance does not guarantee that children have learned to behave appropriately in a particular first-grade classroom.

Academic Content

What are pupils to master during their academic years? Answers to this question in the United States vary both within and across specific states. In some states, the curriculum in certain subjects is

reasonably explicit. However, it should be clear that there is not only variance in general curriculum goals across states, but that the "intended curriculum" in many states is stated in varied ways by particular school districts. Variation in curricula between and within states is perhaps not surprising, but recent evidence suggests that in many states the curriculum offered may vary significantly within a school district, and often even within a school (e.g., two first-grade teachers in the same building place different emphasis upon particular subjects, see Carew and Lightfoot, 1979).

Brophy (1982) has argued that teachers in some schools are allowed more latitude in deciding upon the curriculum than is the case in many school districts. Hence, what children are exposed to depends upon the curriculum decisions that his or her classroom teacher makes. Also, since many teachers are dependent upon the textbook (and the associated teacher's manual for instruction), the particular textbook chosen by the teacher (or the school or district) exerts a heavy influence upon what is learned.

Hence, classrooms vary in the intended curriculum they plan to implement, as Brophy (1982) notes. However, they also vary in how much of the actual curriculum they present. That is, teachers not only vary in instructional intent (e.g., one sixth-grade teacher places emphasis upon writing; whereas, another emphasizes literature analysis), they also vary in how much of the school day is actually placed on instruction.

For example, John Goodlad, in an earlier presentation to the Commission, reported that in some schools only 18½ hours were spent in instruction each week (although 25 hours was the required minimum); 43% of the resources in one high school was devoted to vocational

education. Others have also commented upon how widely time allocated for instruction (as well as how well allocated time is used) varies from teacher to teacher (e.g., Caldwell et al., in press). Two children who live in adjoining houses and who attend the same neighborhood school may receive varied curriculum because of the particular teacher they are assigned to.

Part of the difference in curriculum received by the two students referred to above would be due to differences in teachers' managerial ability (more time is spent on instruction); however, part of the difference in curriculum is due to beliefs and preferences (How enjoyable is it? How important is it?) that teachers hold for particular subjects (e.g., see Buchmann and Schmidt, in progress). Also, as Brophy (1982) argues, the curriculum varies because teachers' subject matter and skill varies. Teachers' erroneous beliefs about subject matter and/or the extra knowledge they bring to a particular subject makes learning about "science" (values and beliefs about what science means as well as content in particular areas) in one classroom different than in another class.

Teachers in some instances further reduce the intended curriculum by the differential way in which instruction is presented to different groups of students (students believed to be quick learners and students believed to be slow learners are the most notable cases although sex, race and other individual characteristics are sometimes associated with differential teaching behavior. Such differences in curriculum to students in the same class is most apt to be seen in classes where teachers group by ability for instruction.

As a case in point, Confrey and Good (in progress) observed instruction in seventh-grade English and mathematics classes and

interviewed some of the students in high and low groups in each class. They believe that the intended curriculum is especially likely to be distorted because of the ways that teachers interact with low-group students and the kinds of tasks they assign these students. In general, they found that content presentation to low-achieving students often results in content fragmentation, mystification, repitition, low quantities of theory, and limited exposure to powerful or integrating concepts. Confrey and Good found that students in low groups in classes grouped by ability end up spending much of their time working on repetitive drill activities which are inadequately presented and discussed and inadequately tied to relevant integrating concepts, so that the intended benefit from them is unlikely to be received even if the activities are done correctly.

Lanier et al. (1981) found that much more time working on repetitive drill was more characteristic of instruction in general mathematics than in algebra classes. Hence, whether students are grouped for instruction within or between classes there often is less focus on theory and meaning (but more drill and practice) for students believed to be lower achievers.

In addition, teacher failure to explain the purpose of activities adequately often produces discrepancies between the meanings of those activities as seen by the teacher and the students. For example, Confrey and Good observed one teacher to assign twelve long-division problems to her low group. Instead of having them do the problems as written, however, she had them round off the problems. This was intended as an exercise to strengthen their estimation skills and increase their efficiency at long division. Once they completed the rounded off versions of the problems, they then were expected to

complete the original problems and compare the strategies and answers. However, these intentions were never communicated to the students, and interviews with students indicated that they interpreted the purpose of the rounding-off assignment as providing them with easier problems to work on. Furthermore, observations indicated that most of the students did the first set of problems on one side of the page and the second set on the back, so that they never compared their strategies and answers to the two forms of the problem and thus never got the intended benefit from the exercise.

In another example, the teachers used tests emphasizing primarily speed rather than power to group students for mathematics, conveying the impression that mathematics involved solving problems not only accurately but quickly. What is more, students in the low groups were observed to spend much of their seatwork time attending to what was being said in the high group, so that only a portion of their seatwork time was spent doing their assignment. Often they did not even finish their assignment because they spent most of their seatwork time listening in on the interaction between the teacher and the high group. The teacher was mostly unaware of this but was aware that the low group students seemingly were having difficulty completing their assignments within the available time, thus reinforcing her low opinion of these students' mathematical abilities.

Pull-Out Instruction

Ironically, some students may receive less and/or different instruction because of the attempt to provide students with more assistance. Hill and Kimbrough (1981) studied pull-out instruction in schools that operated four or more categorical (special need) programs. State and district administrators had identified these schools as ones

experiencing difficulties in administering multiple categorical programs (hence, the sample may not represent all school districts). Case study data were collected in 24 elementary schools in eight school districts across the nation.

These investigators found that pull-out programs posed problems for students who received special assistance as well as for regular teachers. In some schools, children were out of classes for categorical programs so frequently that teachers had their total classes only 1½ hours daily and therefore were unable to implement the state mandated curriculum. Fragmented instruction was especially a problem for Hispanic students because they qualified for so many special programs (six or seven daily!). Indeed, even though many Hispanic students had attended school for five years, they had received no formal instruction in science or social studies. Special programs were replacing, not supplementing, the core curriculum for many students. Because of scheduling problems (created by multiple pull-outs), many districts allowed special categorical programs to replace core programs. Many low-achieving, disadvantaged students thus received only special instruction, though they were entitled to regular instruction in math and reading as well as supplementary instruction in those subjects.

When students did receive both regular and supplemental instruction, they were still not well-served. Kimbrough and Hill found that in several cases incompatible teaching methods and materials were used in special and regular classrooms. Hence, many children became confused by conflicting approaches taken by special and regular teachers. Conceptual learning would be especially difficult for students who receive conflicting information (i.e., it is hard enough to learn the concept of fractions without being taught conflicting conceptualizations at the same time).

Finally, it should be noted that Kimbrough and Hill's data clearly indicate that, in addition to the instructional ambiguities that may be inherent in pull-out programs, disadvantaged students are segregated from more advantaged pupils for much of the school day.

Ligon and Doss (1982) reached similar conclusions in their examination of Title I programs in Grades 1-5 in the Austin, Texas independent school district. They found that Title I instructional services were not supplementary to regular services but instead supplanted the regular program. Students who attended more than one compensatory program actually received less regular instructional time than students who were enrolled in only one program.

The disruptive effects of pull-out instruction are demonstrated in one class in an ethnographic study by Florio (1978). She writes:

> "Ms. Wright's classroom presents evidence of the gradual establishment of contextual expectations among children even during events like worktime in which the constituent contexts are not discussed by participants. As has been suggested above, the expectations are most visible when they are violated. Recall, for example, that Ms. Wright's class exists within a Title I school where there are many opportunities for tutorial help and enrichment outside of regular class activities. Children come and go from the room with great frequency and in large numbers for bilingual class, remedial reading and math, speech and physical therapy. At first glance such comings and goings would not appear to disrupt an event which is as 'open' as worktime. However, we now know enough about the subtle, complex organization of worktime to recognize that it can, indeed, be interrupted. The teacher's resistance to interruption and what happens when interruption occurs serve to illustrate the contextual expectations that teacher and children come to share in the course of a year of worktimes. The following examples illustrate:
>
> > Worktime was interrupted this morning by a trip to a bake sale held by some older children in another part of the school. Ms. Wright mentioned the bake sale during the first circle. However, at 9:40, while the children were engaged in worktime activities, Ms. Wright attempted to call everyone together to get their money and leave for the bake sale. She said, 'Alright, would everyone go and sit on the rug for a sec?' At this point some children did go to the rug, but many did not. They began to clean up instead, even though their activities had barely gotten

started. Ms. Wright had to remind them that they would be returning to worktime after they had finished visiting the bake sale (Field Notes, 10/21/75).

On another day, an anticipated interruption of worktime made it difficult for the children to become focused on their worktime tasks. Although the teacher does not talk about worktime having a focused time, she lamented its absence explicitly on this day:

> Today, the teacher and children knew in advance that their worktimes would be interrupted by a trip to the auditorium where class photographs would be taken. They were informed by the principal that he would call over the public address system when the photographer was ready for them. The children had come to school dressed for the occasion. They were reminded by Ms. Wright that, since they were dressed in good clothes, they should be careful during worktime. As a result, worktime was physically subdued. It appeared that the impending interruption of worktime was making it difficult for Ms. Wright and the children to focus on activities and to get involved in them. The level of ambient noise was high, and there was a lot of wandering. Finally, in an exasperated tone of voice, Ms. Wright said, 'I wish I knew what time they're gonna do this so I could plan something!' (Field Notes, 3/5/76).

Finally, even when the special activity which will interrupt worktime occurs right in the classroom, it is potentially troublesome. The following incident is an example:

> A math tutor whom Ms. Wright had never met came in during worktime today to announce that several students would be receiving extra help in the room during two mornings each week. Ms. Wright, who has frequently voiced objection to the removal of so many of her students to work with specialists at the expense of their opportunity to engage in activities with their own teacher and classmates, was likewise resistant to the idea of in-class help. Although the math tutor said, 'I've worked in open classrooms before, it will be no problem!' Ms. Wright disagreed. She cited the following objections:
>
> (1) it would be 'too noisy and distracting' for the special students as well as for the rest of the class;
> (2) it would be 'breaking up [her] time' with the class;
> (3) she said, in concluding, 'I know Clarice [the school psychologist] wants people in the room, but . . .'
>
> The tutor recalled the initial objections of other teachers, but insisted that 'open cla- ooms' posed no such problems.

> Ms. Wright reiterated that there were times of the day which 'shouldn't be interrupted.' They adjourned having decided that the children would be tutored out of the room and at a more opportune time. Ms. Wright, however, told me that she was determined to take the matter 'to the office' (Field Notes, 11/18/75).

Given what we now know about the organization of worktime, we can understand Ms. Wright's objections. They are not instances of arbitrary resistance to the tutor's help. We see that Ms. Wright is attempting to protect the integrity of an important interactional event in her room, an event which she and the children are managing as a series of contexts about which there are shared expectations. To preserve worktime as it has come to be known by the students, she must insure that the contexts through which children pass in its course continue to exist. Personnel and social relations as well as activity in physical space play important roles in the nature of those contexts" (p. 145-148).

Ironically, then, it seems that children who appear to be in most need of additional instruction time often receive less rather than more instructional help. However, other possible problems are also created for those students and their teachers by pull-out instruction. Children who perhaps have the fewest time-management skills must know when to leave class, when to return, and must negotiate with their teachers about work they have missed (while out of the room). Also, these students have to return to their regular rooms and no matter how carefully they enter the classroom, it is likely that their re-entry often disrupts regular classroom activities. Considering teachers' generally negative reactions toward interruptions and pull-out programs (as noted by Florio), it is likely that they may react negatively when students try to find out what work they need to make up. Even though teachers' reactions may be due more to the program and the interruption than to students, pupils may view themselves as causing the teachers' irritation.

Although no studies have directly examined this question, it seems likely that students in pull-out instructional programs will feel some

tension when they enter and leave the classroom. Mary Rohrkemper (personal communication) reports that in conversations with her, students have commented about the unpleasantness of returning to the regular classroom ("Everybody knew where I had been.").

Florio's analysis would also suggest that perhaps the biggest loss for the pull-out student is less access to the social language and the social identity of his/her classroom group. That is, the student's frequent absence from the room will guarantee an inability to participate in decisions about how the classroom rules and norms evolve as well as the chance to learn more refined knowledge about the implicit norms of behavior that the teacher (and fellow students) associate with certain classroom contexts. Hence, the pull-out arrangement works to virtually assure that the student will be deprived of valuable social knowledge about the classroom and lack of such knowledge makes it likely that the student will violate teacher and/or peer expectations.

Gifted Students May Also Suffer

The illustration of pull-out of low-achieving students is but a single instance of the general argument that greater diversity and more bureaucracy causes management problems and inevitable friction between the regular program (classroom) and the special program (e.g., a gifted program). Even relatively powerful students are apt to be victims of such tensions, at least on occasion.

Movement in and out of the room is often reacted to negatively by teachers, independent of the status of the student involved. For example, in informal contact with several gifted pull-out programs, (gifted students are removed from the regular classroom for a few hours each week), I found that gifted instructors routinely experience great difficulty in coordinating the few hours that they teach each week

with the regular classroom teacher. The irritation of the pull-out itself and the reteaching and/or reassigning of materials associated with it are so great that students who are generally positively perceived by teachers have difficulty obtaining assignments and in making up work associated with tasks that they missed. It is thus not uncommon that gifted students have to pay a price in terms of more negative interpersonal relations with classroom teachers when they participate in pull-out instructional programs. Even talented, resourceful, and confident elementary school children have found it uncomfortable (and may avoid doing so) to confront regular classroom teachers about unfair practices (e.g., testing over material presented when they were in the pull-out gifted class).

Teachers may be somewhat more likely to express their negative attitudes toward pull-out programs generally when interacting with "low" than "high" pupils because these students are involved in more programs and because they have less power. Also, because they have less developed social skills (and of course absence from regular classes denies them the chance to develop such skills!), it seems more likely that these students will experience interpersonal difficulties.

Mainstreaming

Mainstreaming is another law designed to improve the educational lives of students (just as the intent of pull-out instruction was to provide students with additional instructional assistance). In particular, the intent of public law PL 94-142 was to place students who had been removed from regular classrooms and regular instructional programs because of alleged handicapping conditions (physical or mental) back into the classroom. The intention was to place "handicapped" students

in the least restricted environment and to allow them to receive normal instruction with regular students whenever possible.

The effects of mainstreaming appear to be problematic (in some classes with certain teachers, it works well; in other classes it has negative effects on all students). However, perhaps a more telling argument is that mainstreaming legislation may have increased the frequency with which students believed to be less capable receive instruction segregated from students believed to be more capable.

Sarason (1982) put it this way: "What the law intended and my experience bears out, is that the number of segregated individuals should be reduced somewhat. If anything, however, there has been an increase in the number of special programs housed outside of the regular classroom" (p. 253).

Sarason's experience has led him to conclude that students are often denied instruction to which they are entitled and access to instruction with students believed to be more capable. However, if disadvantaged students do gain access to regular instructional programs it is not entirely clear that they will benefit educationally. For example, there is a long history of tracking and ability-grouping instruction that suggests that many students in the same school are exposed to dramatically different instructional expectations and experiences.

The Effects of Ability Grouping and Tracking

Yet another reason that "regular" students receive less or different instruction in some classes is because of tracking and ability grouping. Students are often segregated for instruction in American schools. The impact of heterogeneous or homogeneous grouping (on the basis of measured aptitude or students' previous achievement history) has been a frequently examined but inconclusive research area.

The difficulties of reviewing and synthesizing this research have been commented upon elsewhere (e.g., Good and Marshall, in press; Esposito, 1973; Rosenbaum, 1976; Persell, 1977). Despite the complexities of the research issues embedded in this particular question, recent investigators and reviewers have begun to reach the conclusion that the effects of ability grouping (teaching only students of similar ability in an instructional setting) do not have much, if any, positive effect upon students who possess relatively high and medium levels of ability but often have quite harmful effects upon the achievement of low students when they are placed into homogeneous, low-ability grouped classes for instruction.

Good and Marshall (in press) have noted that the ill effects of teaching low-ability students in the same group are clearly demonstrated if one examines only the literature that has included observational measures. The research that has examined what takes place in tracked classes and during group instruction when students are grouped on the basis of ability, consistently illustrates that students who are placed into low groups get less exciting instruction, less emphasis upon meaning and conceptualization, and more rote drill and practice activities. It is beyond the scope of this paper to review this literature; however, it is instructive to examine one research study that illustrates why the segregation of students from regular instructional activities seldom works.

One of the most interesting studies of instruction in high and low first-grade reading groups in one classroom was conducted by Eder (1981). This study is chosen for attention because it looks at both student and teacher variables as explanations for what takes place during reading instruction and, in general, provides a comprehensive

examination of instructional process. She found that students who were likely to have difficulty in learning to read generally were assigned to groups whose social context was not very conducive to learning. In part, this was because assignments to first-grade reading groups were based upon kindergarten teachers' recommendations, and a major criterion of placement was the maturity of the students as well as their perceived ability. Other research has suggested that initial placement of students into groups by teachers is dependent upon their learning style and level of maturity as well as their ability.

Most of the students in the study were relatively "homogeneous" in terms of their academic ability and socioeconomic background (students were from middle-class homes). Importantly, none of the students could read prior to entering first grade. Their progress in reading could therefore plausibly be related to the reading instruction they received in first grade. No doubt there were differences in reading potential among students, but these students were all basically non-readers at the beginning of the year. Despite the relative homogeneous nature of this student population, the first-grade teacher still grouped pupils for reading instruction.

She studied reading group behavior throughout the year using qualitative and quantitative observational codes and made videotapes of many reading group sessions. Videotapes enabled Eder to examine processes repeatedly and to more easily study instruction from a variety of perspectives (e.g., teacher as reinforcer, the social structure of group, etc.).

Behavioral Differences

Eder found that the teacher discouraged interruptions of a student's oral reading turn within the high group but not in the low

group. It is her belief that the teacher may have been concerned with maintaining the interest of the low group during other students' reading turns (in general, their reading turns tended to be longer and filled with more pauses); the teacher may also have thought that lows had less intrinsic interest in the material; therefore, she was more willing to encourage most forms of participation or responses from low students but demanded more appropriate behavior and responses from highs.

In terms of the skills and attitudes of students in the low reading groups, Eder (1981) states that the most immature, inattentive students were assigned to low groups. It was almost certain that the teacher would have more managerial problems (e.g., distractions) with this group than others, especially early in the year. Indeed, because the teacher was often distracted from a student reader in the low group who was responding (because of the need to manage other students in the group), students often provided the correct word for the reader. Readers were not allowed time to ascertain words on their own; even though less than a third of the students interviewed reported that they liked to be helped because they thought this interfered with their own learning. Eder's work indicates that low students had less time than highs to correct their mistakes before other students and/or the teacher intervened.

Eder also found that students in the low group spend 40% of their listening time not attending to the lesson (versus 22% in the high group). Low students frequently read out of turn, adding to the general confusion. Eder reports twice as many teacher "managerial acts" in the low group as in the high group (157 versus 61), and found that turn interruption increased over the course of the year. Due

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to management problems, frequent interruptions, and less serious teaching, low students may inadvertently have been encouraged to respond to social and procedural aspects of the reading group rather than academic tasks.

Conceptualizing and describing what students learn in going to school is a very difficult task. However, it seems plausible to argue that one of the effects of being in high and low reading groups in the classroom study by Eder is that students were learning different norms for attention. In essence, students in the low reading group were being encouraged to be inattentive; whereas, students in the high group were learning to attend to instruction during group settings. The extent to which these norms were being transferred to other subjects and to other classrooms is unknown; however, it appears that the interruption strategy that the students are learning will provide them with some sharp discontinuities and difficulties in at least some instructional settings. Although Eder and Felmlee (in press) convincingly argue that the norm of attention is being learned, I suspect that other norms are being learned as well ("It's okay to think" versus learning to depend on others in difficult or ambiguous situations). Such differences I believe ultimately contribute to students developing either a passive or proactive orientation toward learning.

There is ample and compelling anecdotal evidence to suggest that once students are removed from the low reading group that they can respond in better and more appropriate ways. Eder and Felmlee (in press) found that when a student (in the study described above) was moved from a lower to a higher group that his attention during reading group instruction improved over time. Similarly, Weinstein (1982) found that when a student in a low group was moved up (and in this case

the teacher was reluctant to make the change), student performance expectations and achievement improved notably. Hence, there is case study data to show that when a student is moved into a higher group, achievement increases. Presumably, as Eder argues, the ecology of a low group works to sustain an environment in which it is more difficult to learn.

High Achievers and Ability Grouping

Assignment to ability grouping impacts the children's education lives from all socioeconomic levels as well as all racial and ethnic groups. It is important to note that the influence works in a relative and not in a totally absolute fashion. That is, in the richest school districts it is not uncommon that the children of bright, talented, and successful professionals are placed in the bottom reading group, not because they are not capable of reading (in some schools virtually all students come to school reading but are still grouped). Hence, students placed into the low group are taught with a group of students that are relatively less talented (even though students who are placed in the low group in one school district would be considered model students in another) suffer status differences in the class and perhaps pick up subtle cues from parents and teachers that they have a problem ("Are you perhaps not trying hard enough?"). It seems that such children are prime candidates to become "under achievers" because it may be easier to be passive and to feign indifference rather than to try and to risk failure. One wonders how much potential and creativity is wasted by the unnecessary and premature assignment to ability groups in first grade classes.

Also, it should be noted that because of group placement these students suffer from the fact that they cannot work with students who

have somewhat better social and academic skills (e.g., skills for obtaining information from adults). If allowed to work with these students who are effective role models, it would be probable that talented youth who are placed into low groups would develop much more useful social information than they do presently (e.g., learn how to ask a question in a way that the teacher answers and does not perceive the question as needless or aggressive; to learn when not to ask questions; learn how to get information from other sources, as well as how to "self-motivate" and "self-evaluate").

Teacher Expectations

Even when students receive instruction in the same group, it does not assure that students will receive the same or appropriate treatment in all classes. In the last fifteen years there have been many studies that have examined the relationship between teachers' beliefs about individual students' achievement level and classroom interactions that teachers share with students believed to be high and low achievers. For example, some time ago Brophy and Good (1970) expressed a model for studying the relationship between teachers' achievement beliefs for individual students and classroom behavior. The model appears as follows:

1. The teacher expects specific behavior and achievement from particular students.

2. Because of these varied expectations, the teacher behaves differently toward different students.

3. This treatment communicates to the students what behavior and achievement the teacher expects from them and affects their self-concepts, achievement motivation, and levels of aspiration.

4. If this treatment is consistent over time, and if the students do not resist or change it in some way, it will shape their achievement and behavior. High-expectation students will be led to achieve at high levels, whereas the achievement of low-expectation students will decline.

5. With time, students' achievement and behavior will conform more and more closely to the behavior originally expected of them.

In subsequent work (e.g., Brophy and Good, 1974; Good, 1981; Brophy, 1982, Cooper and Good, in press), it has become clear that the extent to which teachers overreact to differences that students bring to the classroom (such that students' behavior and achievement is unduly constrained) appears to be an individual difference variable (it has been estimated on the basis of many studies that perhaps one-third of teachers interact with students believed to be low achieving in ways that will sustain low achievement). Although the way in which this takes place varies widely, some of the ways in which teachers have been found to express low expectations can be expressed in the following ways:

1. Seating slow students farther from the teacher or in a group (making it harder to monitor low-achieving students or treat them as individuals).

2. Paying less attention to lows in academc situations (smiling less often and maintaining less eye contact).

3. Calling on lows less often to answer classroom questions or make public demonstrations.

4. Waiting less time for lows to answer questions.

5. Not staying with lows in failure situations (providing clues, asking follow-up questions).

6. Criticizing lows more frequently than highs for incorrect public responses.

7. Praising lows less frequently than highs after successful public responses.

8. Praising lows more frequently than highs for marginal or inadequate public responses.

9. Providing low-achieving students with less accurate and less detailed feedback than highs.

10. Failing to provide lows with feedback about their responses more frequently than highs.

11. Demanding less work and effort from lows than from highs.

12. Interrupting the performance of low achievers more frequently than that of high achievers.

Unfortunately, the effects of differential teacher behavior on student behavior, attitudes, perceptions and achievement have not been studied systematically. However, there is growing evidence that students are aware of differential teacher behavior and that certain practices have negative effects on students' beliefs and achievement (e.g., Weinstein, 1982).

What students learn over time (e.g., what they conclude from specific patterns of behavior they receive) about the meaning of school work and their role as a student is uncertain, and we have no research evidence about when and how students reach basic conclusions about their commitment to scholarship generally or to particular subjects, or about how students derive conclusions about particular work habits (how to prepare for an exam, is it better to ask teachers for information or to feign knowledge). Howvever, there is growing evidence to suggest that some students learn to assume a relatively passively orientation to classroom life.

Passivity Model

It is my belief that the ambiguities of interactions with different teachers is sufficiently varied so as to pose translation problems (What am I expected to do?) for some students. In particular, I believe that some students who are believed to be low achievers receive varied teacher behavior that, in time, reduces student initiative both behaviorally (e.g., raise hand, approach teacher) and cognitively (e.g., attempt to think about the meaning of an assignment or a particular subject). As I have argued elsewhere (Good, 1981).

Variability of Teacher Behavior Toward Lows

Teachers also show differences in the way they express expectation effects. Sometimes these style differences are very dramatic. Some teacher criticize low achievers more frequently than highs per incorrect response, and praise lows less per correct answer than is the case for highs. In contrast, other teachers will praise marginal or incorrect responses given by low achievers. These findings appear to reflect two different types of teachers. Teachers who criticize lows for incorrect responses seem to be basically intolerant of these pupils. Teachers who reward marginal (or even wrong) answers appear to be excessively sympathetic and unnecessarily protective of lows. Both types of teacher behavior illustrate to students that effort and classroom performance are not related (Good and Brophy, 1977).

Over time, such differences in the way teachers treat low achievers (for example, in the third grade a student is praised or finds teacher acceptance for virtually any verbalization but in the fourth grade the student is seldom praised and is criticized more) may reduce low students' efforts and contribute to a passive learning style. Other

teacher behaviors may also contribute to this problem. The low students who are called on very frequently one year (the teacher believes that they need to be active if they are to learn), but who find that they are called on infrequently the following year (the teacher doesn't want to embarrass them) may find it confusing to adjust to different role definitions. Ironically, those students who have the least adaptive capacity may be asked to make the most adjustment as they move from classroom to classroom. The greater variation in how different teachers interact with lows (in contrast to the more similar patterns of behavior that high students receive from different teachers) may be because teachers agree less about how to respond to students who do not learn readily.

It may also be the case that even within a given year low achievers are asked to adjust to more varied expectations. This may be true in part because low achievers have different teachers (in addition to the regular teacher they may have a remedial math, reading, or speech teacher). The chance for different expectations is thus enhanced. Certain teachers may also be more likely to vary their instructional styles toward lows within a given year. For example, they may give up on an instructional technique prematurely (when the phonetics approach initially fails the teacher tries another instructional method).

What are the implications if teachers provide fewer changes for lows to participate in public discussion, wait less time for them to respond when they are called on (even though these students may need more time to think and to form an answer), criticize them more per incorrect answer, and praise them less per correct answer than they do for high students? It seems that a good strategy for students who

face such conditions would be not to volunteer or not to respond when called on. Students would appear to be discouraged from taking risks and chances under such an instructional system. To the extent that students are motivated to reduce risks and ambiguity--and many argue that students are strongly motivated to do so (Doyle, 1980)--it seems that students would become more passive in order to reduce the risks of noncontingent teacher feedback and assignments.

What we need to begin to consider now are the circumstances under which major differences in teacher behavior are adaptive and for which types of students. For some styles of learners, variations in teachers' instructional behavior and expectations will surely have positive effects in many instances.

Having acknowledged that variability is beneficial for growth under certain conditions, I want to come back to the problem that some students may experience too much or uninterruptable discontinuities in the classroom. For example, if problem solving in mathematics is taught one year as "take your time and come with one or two best approaches for stating the problem" and the next year it is taught as "come up with as many hypotheses as you can and then begin to respond to the problem"--what are the effects on student beliefs about mathematics (e.g., does he or she conclude that mathematics is an arbitrary set of rules . . . a system that he or she can't figure out or doesn't want to?).

The argument here is not necessarily to reduce approaches taken to presenting subject matter or reward structures associated with work, but to argue that discontinuities when needed and appropriate (as many are) and how such expectations and work standards can be communicated in ways in which they are more likely to facilitate achievement. For example, it is my belief that <u>when</u> mathematics teachers

know their programs differ in style and emphasis, student learning initiative could greatly be facilitated by brief recognition of and explanations for such differences at the beginning of the year. "Last year we approached problem solving this way for several good reasons . . . this year we are going to look at it in a different way . . ."

However, discontinuities may occur not only because of differential expectations that different teachers hold for groups of students or for particular students (e.g., low achievers), but may also result from incomplete or inconsistent teacher plans. Doyle (1979) has commented upon one of these forms of ambiguity. Specifically, he advocates the examination of classroom tasks and activity structures because he believes that the two differ within some and possibly many, classrooms.[1] In some cases, Doyle contends that what students do in classrooms (and the perceptions of what they are doing and why) may be discrepant with the actual task that the teacher has in mind. That is, students are practicing the wrong operations. For example, a teacher may spend much class time having students diagram sentences; however, the teacher might choose not to test whether students can apply this skill (e.g., students are required to write original sentences). In this case, from Doyle's perspective, having students practice diagramming sentences would have been an activity and not a task, since it was not functionally related to the intended outcome.

As an explicit case in point, Doyle (1979) notes that teachers have been found to praise inappropriate student responses. Reasons

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[1] From Doyle's perspective, a task consists of two elements: (a) a goal and (b) a set of operations necessary to achieve the goal. He argues that there are two consequences to accomplishing a task. First, the person develops information (e.g., facts, principles, etc.) and also the person will practice operations (e.g., memorizing, analyzing, etc.).

for such teacher behaviors may be laudable (e.g., to encourage classroom participation); however, the discrepancy between stated teacher behavior (get thoughtful answers) and accepted behavior (wrong answers) may teach students that the real task is to respond quickly and not to think. Su , discrepancies between activity and task demands may communicate low expectations for student learning.

Doyle's work has important implications for the study and design of classroom instruction. Teachers may create varied tasks for diverse student groups in the same class or for different classes that they teach. In some cases, tasks may be different because of student influences on teachers (as Doyle argues), but I believe that the quality of teaching and individual teachers are important variables as well. For example, Doyle maintains that students actively resist ambiguity and risk; however, I suspect that some teachers are better able to encourage students to accept more risk and ambiguity than are others. However, the issue of the relationship between risk and achievement (too much versus too little) needs research attention.

Classroom Composition

I suspect that a key aspect of educational programs is the assignment of students to classrooms. However, little is known about the criteria that principals use when they assign students to particular classes. There are data to indicate that the distribution of students in a particular classroom may influence achievement and such research suggests that "high" and "low" students can learn together in the same instructional setting.

Beckerman and Good (1981) studied the ratio of high- and low-achieving students in classrooms using a sample drawn from a large metropolitan school district that basically served a middle-class population in neighborhood schools. Individual standardized aptitude (IQ)

and achievement data were available for 103 third- and fourth-grade classrooms. They defined classrooms with "more favorable" teaching situations as those in which more than a third of the students were high aptitude and less than a third of the students were low aptitude. "Less favorable" classrooms were those in which less than a third of the students were high aptitude and more than a third of the students were low aptitude.

Beckerman and Good found that both low- and high-aptitude students in favorable classrooms had higher achievement scores than the two groups in unfavorable classrooms. This effect was observed in both third- and fourth-grade classrooms, although the effect was not significant for high-aptitude, third-grade students. In this study, being in a classroom with many high-aptitude students was more beneficial than being in a low-aptitude classroom for low-aptitude students and some high-aptitude students.

Veldman and Sanford (1982) also found evidence that classroom composition might influence student achievement. They measured classroom composition by determining the mean achievement level for each class at the beginning of the year. Their data were from 58 mathematics and 78 English classes in Grades 7 and 8 in nine junior high schools. Veldman and Sanford report that significant interaction effects were found indicating that both high- and low-ability pupils do better in high-ability classes and that the effects of class ability are more pronounced with low-ability students. These results, although obtained with different methods, resulted in conclusions that were very similar to Beckerman and Good's.

In addition to achievement data, Veldman and Sanford also described process differences between higher and lower ability classes.

They report that in higher ability classes there were fewer procedural contacts, behavioral criticisms, and misbehaviors. They concluded that class ability level affected the behavior of low-ability students more than highs, and that there was more active teaching and a better learning environment in higher ability classes than in lower ones. Veldman and Sanford also found (as did Beckerman and Good, 1981) that lower ability students were more affected by group placement than highs. They argue that lower ability students are more likely than highs to conform to the behavior of the majority of their classmates and that all low ability classes can be described as poor learning environments which are frequently disrupted. According to these researchers, changes in class composition or other context variables are unlikely to convert a very effective teacher into a totally ineffective one. Although composition is important, the quality of instruction is a crucial variable which also affects achievement. No doubt research will show quality of teaching, class ability level, and variations in learners' ability in the classroom are interrelated. Furthermore, it appears that certain composition decisions place many low achievers in the same class and increase the odds that more students will assume a passive role in school settings.

Teachers Make A Difference

Composition effects are important (and poorly understood), but they appear to be less important than the quality of the individual teacher. Some teachers are better instructors than are others. Goldberg, Passow, and Justman (1966) conducted a major study of the effects of ability grouping on student achievement and found that for most pupils specific classroom membership influenced achievement as much as the ability pattern of the class. That is, within different

types of homogeneous and heterogeneous classes, achievement variation within an ability pattern was as wide as variations across ability patterns. Teaching effects were quite obvious; within a grouping condition, some teachers obtained more achievement from students than did other students. I suggest that some teachers encourage active student roles in which students are successfully completing academic work and in which learners are not implicitly encouraged to assume passive roles.

Teacher Research

Concern with what teachers and students do in classrooms led many researchers to focus on how teachers interact with high- and low-achieving students. An incidental outcome of this research was the demonstration that teachers vary greatly across classrooms in their behavior, as well as in how they distribute their time and resources within classrooms. Teachers, as noted earlier in this paper, have been found to vary widely in how they organize and conduct classroom learning. Because of space limits, I cannot comprehensively discuss teacher effectiveness research. I would like to describe a research program that I have conducted with Dr. Douglas Grouws at the University of Missouri (for more detailed review of general teacher effectiveness, see Brophy, 1979; Peterson and Walberg, 1979).

Missouri Mathematics Program

We began work in the area of mathematics in the early 1970's when many persons doubted whether teachers could affect students' learning. Our initial purpose was to test the hypothesis that teachers can make a measurable difference in student achievement. In our own classroom observations, we found considerable variability in the behavior of classroom teachers and we wanted to see if variations in teacher behavior could be related to variations in student achievement. (Details

of the research program can be found elsewhere, see Good, Grouws, and Ebmeier, in press).

Naturalistic Study

The purpose of the original study was to determine whether it was possible to identify teachers who were consistent (across different groups of students) and relatively effective or ineffective, using student performance on the Iowa Test of Basic Skills as an operational criterion. In brief, high residual mean achievement scores were found to be associated with several teacher behaviors. Among the strongest relationships were the following teacher behaviors: (1) generally clear instruction and availability of information to students as needed (process feedback, in particular); (2) a non-evaluative and relaxed learning environment which was task-focused; (3) higher achievement expectations (more homework, faster pace); and (4) classrooms which were relatively free of major behavioral disorders. Teachers who obtained high student achievement test scores were active teachers. They gave a meaningful and clear presentation of what was to be learned, provided developmental feedback when it was needed, structured a common seatwork assignment, and responded to individual students' need for help. Teachers who were obtaining student achievement gains placed a premium on providing meaningful content, but they also seemed to listen to and learn from student responses (e.g., reteaching when student performance indicated the need). Effective teachers also encouraged students to participate actively and to initiate questions when appropriate. Indeed, these teachers were helping students to be active not passive learners.

Elementary School Experiment

We were pleased that some consistent differences could be found in correlational research between relatively effective and ineffective

mathematics teachers. However, at that point we only had a description of how more and less effective teachers (in our sample) behaved differently. We did not know if teachers who did not teach the way more effective teachers did could change their behavior or whether students would benefit if teachers were trained to use new methods. To answer these questions, we developed a training program (combining information about how effective teachers behaved in the naturalistic study with other research findings) and conducted an experimental study to determine what effects the program would have on teacher behavior and student achievement in fourth-grade classrooms.

In writing the training program, we characterized teaching as a system of instruction with the following features: (1) instructional activity is initiated and reviewed in the context of meaning; (2) students are prepared for each lesson stage to enhance involvement and to minimize errors; (3) the principles of distributed and successful practice are built into the program; (4) active teaching is demanded, especially in the developmental portion of the lesson (when the teacher explains a concept being studied, its importance, etc.).

In the naturalistic study, emphasis was placed upon internal consistency. We choose a relatively stable school district in order to exclude as many rival hypotheses as possible to the conclusion that teachers and teaching were affecting student learning. In the initial experimental study, a more heterogeneous school population was sampled because we believed this would be a more rigorous test of the training program.

Observers' records indicated that the experimental teachers implemented the program very well (with the exception of certain recommendations concerning how to conduct the developmental portion of

the lesson). Pre- and post-testing with the SRA standardized achievement test indicated that after two and one-half months of the program, students in experimental classrooms scored five months higher than those in control classrooms. Results on a content test which attempted to more closely match the material that teachers were presenting than did the standardized tests also showed an advantage for experimental classes (for details, see Good and Grouws, 1979).

Pre- and post-testing on a ten-item attitude scale revealed that experimental students reported significantly more favorable attitudes at the end of the experiment than did control students. Also, it is important to note that anonymous feedback from teachers in the project indicated that they believed the program was practical and that they planned to continue using it in the future. Research elsewhere indicates that teachers have a favorable reaction to the program, even when it is presented and discussed without the involvement of the developers (Keziah, 1980; Andros and Freeman, 1981).

To explore achievement patterns more fully in terms of student and teacher characteristics, it was considered important to define teacher and student types more broadly. To develop student typologies, an instrument (Aptitude Inventory) was designed to assess student characteristics which might interact with key features of the treatment program, identifiable teacher characteristics, and/or classroom procedures. To obtain teachers' views of the characteristics, organization, and typical activities of their classrooms, a questionnaire was developed (Teaching Style Inventory). The Aptitude Inventory was administered to all students in the sample and the Teaching Style Inventory was administered to each teacher.

Results suggested that the treatment generally worked (i.e., the means in each cell were in favor of the treatment group), but the program was more beneficial for certain combinations of teachers and students than for others. The data collectively indicated that teachers who implemented the model got good results, yet some teacher types used more facets of the program than did other teachers (see Ebmeier and Good, 1979, for details).

Experimental Research in Secondary School

Considering the relatively successful results of experimental work at the elementary school level, we were very much interested in expanding our inquiry to secondary classrooms. Our work at the secondary level involved a strong control for Hawthorne effects (as did the elementary school work) and also a special condition where some treatment teachers (partnership group) had the chance to help us adapt the program for use in junior high mathematics classes. Both partnership teachers and the treatment teachers were asked to use the instructional program in their classrooms.

Again our findings indicated that some teachers implemented the program more fully than others. Among many findings were the following: (a) the average implementation score was found to correlate significantly with students' attitudes toward mathematics, and (b) instructional time spent on verbal problem-solving activities correlated significantly with students' problem-solving achievement scores. Finally, students' performance in verbal problem solving in both partnership and treatment classrooms was superior to problem-solving performance in control classrooms, although students' general computational achievement was not affected by project participation.

Our research on mathematics instruction, especially at the elementary school level, has convinced us that teachers do make a difference in student learning, and that inservice teachers can be trained in such a way that student performance is increased. The system of instruction that we believe is important can be broadly characterized as active teaching. It is instructive to note that in our experimental work active teaching was an important difference between teachers who were getting good achievement gains and those who were getting lower-than-expected gains. Active teachers presented concepts, explained the meanings of those concepts, provided appropriate practice activities, and monitored those activities prior to assigning seatwork. The fact that these teachers appeared to look for ways to confirm or disconfirm that their presentations had been comprehended by students was particularly important. They assumed partial responsibility for student learning and appeared to be ready to reteach when necessary.

Suggestions/Recommendations

Research on teacher effectiveness has not yielded specific guidelines about how to teach, but it has provided clear evidence that teachers can and do make a difference. As reflected in many recent articles, the current Zeitgeist appears to be a call for increasing the quantity of teaching (more time for basic skills instruction, more "time on task"). However, the most evident message that recent research presents to me is that the quality of teaching needs attention. Our initial naturalistic study of more and less effective teachers indicated that effective teachers were distinguished by how they taught mathematics and not by the amount of time they spent on mathematics. Teachers who obtained higher gains made better use of time and obtained more student involvement, but they also maintained a good

balance between theory and practice (conceptualization, application, and drill).

I believe the most important implication which teacher effectiveness research has for teacher education is that teachers need to be active in their teaching. Teachers who are more active in presenting information, pay attention to the meaning and conceptual development of content, look for signs of student comprehension and/or confusion, and who provide successful practice opportunities appear to have more achievement gains than do teachers who are less active and who rely more upon seatwork and other classroom activities.

I prefer the concept of active teaching rather than the term "direct instruction" (which has been used to describe the pattern of behavior of teachers who obtain higher-than-expected achievement from students) because it represents a broader concept of teaching than does the existing research base. In active teaching, the initial style can be inductive or deductive, and student learning can be self-initiated or teacher-initiated (especially if thorough critique and synthesis activities follow student learning attempts). Active teaching also connotes a broader philosophical base (active teaching can occur in classrooms using a variety of classroom organizational structures), and should become somewhat less direct as students become more mature and instructional goals become concerned with affective and process outcomes. Also, active teaching techniques can be applied in both teacher-led instruction as well as in student team learning/instruction. Active teaching provides an important instructional construct for characterizing the teaching role. With the apparent growing pressure for teachers to function as classroom managers rather than as instructors, more emphasis should be placed in teacher education programs upon

helping teachers to understand active teaching. Others, too, have called for more attention to active teaching. For example, Durkin (1979) argues that comprehension skills are under-emphasized in reading instruction and that some educators appear to feel that they cannot be taught. Such low expectations can obviously be self-fulfilling.

I believe that this research has significant implications for teacher training and that more research on existing variations in teacher behavior needs to be conducted (e.g., identify teachers who are effective in getting gains with a low-achieving reading group and systematically study their classrooms). The general issues of teaching style and student achievement are discussed here to show that variations in teacher behavior have important effects on student learning and that certain teaching skills can be improved relatively quickly and inexpensively. Although teachers' general styles may look similar to observers (e.g., all teachers use a recitation style), variance among teachers in quality of style and the effects of this variation on student learning appear to be much greater than many have thought.

Many writers have called for major changes in the structure of schooling and school experience. In some respects, I too call for reform of schooling. For example, my observations in elementary schools and my knowledge of extant literature have convinced me that students perceived to be high or low in ability are unduly segregated for instruction. I believe that excellence of education (productive individual learning of content and concepts as well as enriched respect for individual differences) can often be accomplished in heterogeneous classes that are led by teachers who plan carefully and actively teach.

It seems to me that teachers often use ability grouping unwisely (e.g., too many groups are formed--creating supervision problems; the

criteria for group assignment are vague and/or based on relatively minor differences among students). When teachers do use ability groups, they need to make explicit the basis for assignment to groups. It is likely that many teachers assign students to particular groups for vague reasons (one group already is too large; rather than because of important objective differences in students' abilities (see e.g., Eder, 1981). Unfortunately, when students are assigned to separate learning conditions (whether they are tracked, pulled-out, or stay in a class but assigned to a low group), students perceived as lows too often receive instruction that is less serious (often trivial), more likely to be devoid of substance (drill and facts rather than meaning and conceptualization), and instruction in which both students and teachers become trapped in the managerial and procedural aspects of instruction. Inferior instruction for "lows" occurs in suburban as well as inner-city schools. Teachers who group students should make special efforts to assess instruction and to assure that students believed to be "lows" receive the same quality of instruction as students believed to be "highs." In practice, "lows" often receive instruction.

When lows are taught separately they experience problems other than content fragmentation. Because they (even in first grade) often have more teachers (sometimes five or six), it is likely that lows have to adjust to variations in behavior among different teachers (some teachers want students to work first and then ask questions; other teachers prefer that students approach them soon so they don't practice errors). It is thus not surprising that many slower students view adults and school situations as arbitrary. Because these students cannot determine their proper role, they often respond passively to school. Most attempts to help students who start with somewhat lower

academic and social skills (in some cases these differences are minor and in yet other instances they do not exist--students are assigned to the wrong group) will therefore widen, not lessen, the gap between their skills and those of other students. Furthermore, these students are systematically denied contact with students who have relatively more social and academic knowledge. Such separation denies lows an excellent chance for mastering skills that are critically important to school success (e.g., how to ask questions, etc.). Failure to learn thse skills further increases the likelihood that slow students will develop a reactive or passive stance toward school work (Good, 1981).

Students learn more than content in schools, and it appears that the form of work arrangements can have important influences upon student achievement. Bossert (1979) has shown that sociometric choices of elementary school children were affected by instructional arrangements. He found that children in teacher-centered, whole-class arrangements tended to pick friends who had achievement patterns similar to their own. However, this effect was not seen in a class where there was a lot of small-group work. Research in this area consists of only a few studies, and it is hard to judge how the form of school work generally affects students' attitudes and achievement. However, extant research indicates that social aspects of education have important effects upon what is learned and how well (e.g., Florio, 1978; Eder, 1981). Future studies will establish whether particular types of teachers and students mediate these effects in complex ways.

My point here is that we need not cling to teacher-dominated instruction as the only way to facilitate desirable changes in student attitudes and behaviors. However, we should carefully understand why we change and evaluate the effects of those changes. Too often

American educators have attempted to solve problems with general solutions . . . and with little success. Fortunately, there is growing interest in examining the effects of organizational form on student achievement and attitudes (e.g., Bossert, in progress), and in understanding how students perceive and react to instruction. In time, it may be possible to integrate research on teachers (e.g., Good, Grouws, and Ebmeier, in press) with studies of classroom composition (e.g., Bossert, 1979), classroom ecology (Doyle, 1979; Hamilton, in press), and students (Weinstein, in press) in order to more fully understand how schooling influences student achievement and affective growth.

At present we do know that teachers' beliefs and behavior significantly affect student achievement. We need to make teachers aware of this information and its potential for application in their classrooms. Unfortunately, data concerning the relationship between teacher behavior and student achievement is limited only to basic skill instruction in elementary schools. We need much more information about how teachers can influence the development of students' social skills as well as other important outcomes of schooling. As I stated above, increased knowledge about the effects of teaching must be integrated with information about organizational and student factors if it is to have important effects upon student achievement. Recent research has become more sophisticated and more systematic and has provided insights about how classrooms function. I believe that continued investment in basic classroom research is necessary if we are to continue to successfully pursue excellence and equity in American schools.

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