

Educational Systems Design by Children for Children

By Ruthanne Kurth-Schai

After a decade of heightened public interest and participation in guiding the development of educational policy, the potential of school-age youth to contribute to this process remains largely unacknowledged and unexplored. The 80s produced a flurry of national reports, all expressing serious concern for the future of youth and society, and suggesting ways in which educational policy and practice might be altered to address such concerns.¹

Although the reports are criticized for failure to understand and to promote the needs and aspirations of women, people of color, and the economically disadvantaged (Grant & Sleeter, 1985; Apple, 1987; Tetreault & Schmuck, 1985), the extent to which they promote assumptions and values concerning the nature of schooling that are centered in adult experiences and perceptions--rather than children's--is not addressed. Although egalitarian approaches to policy design and

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evaluation are increasingly advocated, young students are rarely offered opportunities for full participation.

The consequences of excluding school-age youth from debate and decision-making concerning important educational issues are quite serious. Results of prior research suggest that administrative policies which deny students opportunities to participate in guiding the educational process are associated with student apathy, disillusionment, disciplinary problems, and poor academic performance (Glasser, 1986; McNiel, 1986; Goodlad, 1984). Further, the prevalence of such practices in the schools reinforces broader societal patterns which exclude young people from active and meaningful participation in the social and political life of contemporary communities. In light of prevailing adult assumptions and expectations, the social presence of children is inconsequential, their potential to contribute invisible.² The consequences of perpetuating images of youth as socially useless include low self-esteem, lack of social commitment, and the expression of self-destructive and anti-social behaviors including drug abuse, depression, promiscuity, premature parenthood, suicide, and delinquency (Elkind, 1978; Kagan, 1984; Ferrarotti, 1981; Glasser, 1986).

Youth, and our society as a whole, are further disadvantaged as theory building, evaluation, and policy development in education is impaired by excluding insights children can provide into processes of teaching and learning--insights which are not accessible to adults (Weinstein, 1983; Duke, 1987; Cullingford, 1987; Reifel, 1988; Paley, 1986; LaBonty & Danielson, 1988). As children's opportunities to share their perceptions and preferences are restricted or omitted, the possibility of understanding and responding appropriately to their complex and varied educational needs and interests is diminished. An essential source of **foundational knowledge**--of interpretive, normative, and critical perspectives on education--is overlooked and underutilized. To the extent that this continues, present and future attempts at innovation and reform are likely to achieve only limited success.

In light of the preceding, when asked to investigate the influence of two organizational innovations on the quality of classroom life in elementary school settings, my colleague and I chose to actively involve students, along with their teachers, in evaluating important aspects of their current learning environments and in identifying factors essential to the design of very positive ones.³

In approaching this task we adopted a cultural paradigm for classroom process. Drawing largely from biocultural learning theory,⁴ we defined humans as social learners who learn best through social methods in social groups. Each classroom is conceived of as a **learning culture** in which students and teachers work together to build and maintain an environment conducive to the accomplishment of a variety of complex tasks--including academic tasks, motivational tasks (desire to learn, self-concept), and social tasks (skills necessary to survive, prosper, and contribute to contemporary society).

Learning, from this perspective, is conceived as an interactive community-based process. Thus, both students and teachers play a significant role in shaping the classroom's learning culture--their interaction determines classroom goals, processes, activities, and atmospheres. To thoroughly understand the nature of a learning environment, it is essential to know how the thoughts and values of students and teachers contribute to its structure. As both the actual and potential influence of teachers on processes of educational design and evaluation are widely discussed in current literature (e.g., Giroux, 1988; McNeil, 1986; Wangberg, 1987; Shuell et al., 1988), this paper will focus on the contributions of young students. More specifically, from the perspective of children, what factors are most important in promoting learning?--how appropriate is current educational policy and practice to their needs and aspirations?--in what ways could current policy and practice be enhanced?

Methodology

In selecting a method to construct holistic representations of students' conceptual and value systems, several considerations were important. From a cultural perspective, representation of group perception and opinion is most appropriately constructed through a process that is **inclusive and interactive**. Rather than accepting the aggregate of a small number of individual conceptual statements as representative of the whole, it is important to solicit and synthesize contributions from the entire community of research participants through a process that encourages exchange of ideas and reconsideration of initial impressions in light of the opinions expressed by others. In order to be interactive and inclusive, the process must also be **egalitarian**. If children are to fully participate, status and power differentials among children, and perhaps most importantly those between children and adults, must not be reinforced in processes of data collection and analysis.

Further, representation of group perception and opinion is most appropriately constructed through a process that is **adaptive**. It is important to revise the wording or focus of questions, to introduce new issues for consideration, etc., as directed by initial responses of the research participants in order to more clearly reflect their conceptual patterns and values. Similarly, it is important to ensure that the research process is both **developmentally appropriate**--reflecting performance expectations that are realistic yet not limiting regardless of the age of the research participant, and **context-appropriate**--in this case, workable within the constraints of contemporary classroom settings.

In light of these considerations we selected the Delphi, a standard method of futures research, whereby issues are presented for group consideration through a process that is interactive yet confidential (Linstone & Turoff, 1975). Participants respond individually and anonymously to open-ended and/or forced-choice

questions asked repetitively over a series of rounds. In order to catalyze further thought and deliberation concerning the issues at hand, between rounds panelists are provided feedback describing the collective response. Questions may be revised, added, or deleted as appropriate throughout the data collection process. The process is continued until either a predetermined level of agreement is achieved or it is evident that the issues have been fully considered.⁵

The Delphi described here was used to solicit children's perspectives as part of a larger evaluative study conducted at Maple Grove and West Hill elementary schools. Both schools are located in a relatively trouble free school district in the mid-sized upper midwestern city of Waterton.⁶ Maple Grove was experimenting for the first time with **multi-aging**, a non-traditional organizational pattern whereby students across an age span of two to four years are grouped and taught within the same classroom. West Hill had entered the second year of an innovative program referred to as **rescheduling**. Class size was significantly reduced and individualized attention increased for part of each school day by reallocating existing school staff including both regular classroom teachers and special education faculty. Several of the fourth/fifth-grade classrooms at West Hill combined rescheduling with multi-aging because of variations in the number of students by grade level.

Approximately 350 third- through fifth-grade students, along with their 16 teachers, agreed to participate in the Delphi in order to (a) assist the district in evaluating the success of each innovation, and (b) identify and then express their opinions on issues of importance to the education of elementary school children. Systematic observations of each classroom were also conducted.⁷ Data were collected over a period of three months from January through March of 1988. The Delphi progressed as follows:

Round 1: Twelve classes of students in the schools' experimental populations were interviewed using a group-discussion format to find out how they would describe very positive learning environments, roles and responsibilities teachers and students would have to assume to promote these, and activities that would help create good learning opportunities. We visited each class as a team in the teacher's absence. During a 35-to-45-minute period we interviewed the class as a whole, alternating responsibilities for asking questions and recording answers. The questions were designed ethnographically with "grand tour" and "probe" elements. Sessions were also recorded on audio tape to provide backup. Forty-five-minute interviews were conducted with each of the participating teachers, using the same questions with wording adjusted somewhat for adults. Group and individual interviews were analyzed by extracting each content statement made by any participant. The statements were then grouped by similarity, resulting in the identification of 21 dominant themes, each raised by 75 percent or more of the classes of students and/or individual teachers. (See Table 1)

Table 1
Primary Issues To Be Considered
In Designing Positive Learning Environments

Themes Raised by Most Classes of Students

Ambience: clean, neat, desirable physical characteristics of classroom
 Art: opportunities to participate in fine arts, drama, music
 Cooperation: cooperation among students or between students and teacher
 Disturbance: students not disturbing others, making noise, creating distractions
 Explanation: teacher explains clearly, allows students to ask for help or further explanation
 Fieldtrips: opportunities to learn outside the classroom
 Stress: lack of tension, pressure
 Work: chance to practice, study, review, try, finish, apply one's self

Themes Raised by Most Classes of Students and Most Teachers

Accomplishment: students experience a sense of accomplishment, are challenged, feel that they've tried hard and done their best
 Interest: learners and teachers show enthusiasm, work is interesting
 Learning Readiness: being ready, paying attention, listening, motivated, participating
 Openness: open, accepting, positive, supportive, comfortable, caring emotional atmosphere
 Organization: the need to organize, structure, plan for learning
 Peers: orientation to peers--helping, learning or socializing with peers
 Play: fun, games, play
 Social Development: promotion of student social and emotional growth
 Suitability: developmental appropriateness, matching learning styles to instruction, ability grouping, manipulatives, visuals
 Variety: variations in teaching methods, activities, subjects

Themes Raised by Most Teachers

Attention: teacher awareness of student needs, gives individualized attention or work
 Home: includes issues related to students' home life, children's backgrounds, interaction between home and school
 Responsibility: student choice, decision-making, government, leadership

Rounds 2 & 3: During Rounds 2 and 3, we began by verbally reporting each major interview theme to the students. As each theme was introduced, the students were asked to guess how it had been viewed by the other classes and the teachers.

Then, because we wanted to promote further thought and discussion, we showed them pie graphs which displayed the relative importance attached to each theme by students and teachers, but did not identify whether the themes were perceived positively or negatively. After viewing the graphs, the students were asked to share their thoughts on the actual results.

Following the discussion, we read to the students a series of specific statements about classroom life. These were developed in reference to the 21 themes identified during Round 1. All Delphi statements were expressed in terminology used by the children. Some were designed to provide opportunities for participants to evaluate the quality of their current learning environments, others to collect and synthesize their perceptions of highly desirable ones. The statements were further divided into two classes. For the first group, the students were asked to indicate their level of agreement using a five position scale ranging from "strongly disagree" to "strongly agree." The scale was represented on the answer sheets in a picture format with faces displaying very unhappy through neutral and very happy expressions. For the second group of statements, the children were asked to indicate how often a particular event raised during Round 1 occurred in their classroom. They were again asked to respond to a five position scale, represented on the answer sheet in the form of empty boxes to signify that the event "almost never" occurred, and partially to completely filled boxes indicating that the event occurred with some frequency to "almost always." Teachers were given copies of the graphs, asked to consider the results, and then to respond individually to the same sets of statements given the students on response forms designed for adults.

All participants were also asked to respond to several open-ended questions at the end of each round. During Round 2, students and teachers were asked to respond to questions concerning the advantages and disadvantages associated with multi-aging or rescheduling. In Round 3, participants were asked to again consider the initial question posed in Round 1--what factors are most important in creating positive learning environments? Students were asked to draw a picture of their most important factor and to accompany their drawing with a descriptive phrase or sentence. Teachers were asked to write a brief statement.

Similar to the analysis of the interview data, responses to the open-ended questions were analyzed to identify primary content themes. The scaled responses were analyzed by calculating percentages of students and teachers selecting each response to each statement. Student responses are listed in Table 2 in descending order of consensus.⁸ Because the Delphi was part of a larger evaluative study conducted to assess the results of multi-aging and rescheduling experiments, we also needed to determine whether or not student or teacher responses to scaled statements varied by organizational type. Additionally, we were interested in the effects of these different classroom experiences upon children's policy perspectives. To investigate these issues, the means for multi-aged, rescheduled, and

combined classrooms were calculated and subjected to a t-test. Differences reaching the .05 confidence level were accepted as significant. All statements indicating significant differences in student opinion by organizational type are followed in Table 2 by an asterisk.

Table 2
Student Response to Delphi Statements

<u>Statement</u>	<u>Percentage of Students Agreeing with Statement</u>
A classroom is a better learning place when you learn many different things in many different ways.*	86%
Children should help decide the rules for the classroom.*	84%
The children in this classroom come with their minds ready and willing to learn.*	74%
When I have friends in the classroom, I learn more and understand better.	73%
If I had more time to study and practice at school or at home, I would learn more.	73%
It is just as important for students to get along with other learn to people as it is for them to learn school subjects.*	69%
I would learn more and understand better if this classroom was quieter and less distracting.	68%
This classroom has rules that make it easier for us to learn.*	66%
I learn more and understand better when I get to choose what I want to study.	63%
My teacher knows a lot about me and how I learn.	62%
I would learn more and understand better if the teacher reviewed lessons more often.	60%
Children learn more when there are learning centers set up in their classroom.	57%
Children find it easier to learn when the classroom is clean and neat.	52%
When my teacher and mother or father know each other and talk about my work, I do better in school.*	51%
I learn more and understand better if I can see pictures or handle objects.	50%
I would learn more and understand better if my teacher assigned more projects, experiments, and reports.	49%
In this classroom no one feels left out we respect each other and don't do or say mean things.*	48%
Children learn more and understand better when there are fewer students in the classroom.*	46%
Children learn more and understand better when the work is difficult and challenging.*	35%
It is hard for me to learn well because this classroom is too small and too crowded.*	29%

Table 2 - continued

If we played learning games less often, we would have more time for learning important things.* 26%

We would have more time to learn and could learn better if we had fewer breaks. 13%

Statement **Percentage of Students Indicating Event Occurs Frequently**

I listen and pay attention to the teacher.* 73%

Children learn more when they go on fieldtrips than when they stay in the classroom.* 73%

In this classroom I work hard and feel proud of my work. 73%

I learn more and understand better when the activity is fun. 66%

My teacher comes to class well prepared and well organized.* 61%

When children get rewards for their work, they learn more and understand better. 56%

My teacher has enough time to answer my questions and help me when I need it. 51%

When our teacher gives us a lesson, he/she has enough time to explain it very clearly to us. 50%

The students in this classroom cooperate with and help the teacher.* 48%

The students in this classroom cooperate with each other and work together well. 47%

In this classroom the students help each other learn.* 46%

I learn more and understand better when my teacher is real excited about the lesson. 46%

Children should try to solve their own problems in the classroom.* 44%

Children feel better about learning when the teacher tests them, and then separates them into groups so they can work with other students who learn at the same level.* 44%

The children in this classroom help each other feel good about themselves and their school work.* 44%

Writing and acting out a play helps me to learn more about what we're studying. 36%

I learn more and understand better when I work alone instead of with a group. 31%

I feel rushed and hurried in this classroom. 27%

* Statements indicating significant differences in student opinion by organizational type.

Student Designs of Positive Learning Culture

From a policy perspective, one of the best ways to organize and to communicate Delphi results is to construct a narrative description of the policy alternative or alternatives depicted in the data. The following scenario describes student perceptions of positive learning culture developed by bringing together: (a) responses to Delphi statements indicating moderate to high levels of consensus (60 percent or more) concerning perceived desirability (agree to strongly agree) or frequency of occurrence (often to almost always) among the entire student population; and (b) primary themes raised both at the beginning (Round 1 interviews) and at the end (Round 3 open-ended questions) of the study in response to questions concerning factors of greatest importance to the design of positive learning environments.

Student Scenario of Positive Learning Culture

Classroom Atmosphere: Students feel loved, cared for, comfortable, and confident. They have friends in the classroom which helps them to learn more and understand better. Teachers and students are nice, kind, respectful, and friendly to each other. Making new friends and learning to get along with others is valued as much as learning school subjects. When difficulties arise, the class talks things over which helps everyone to feel better. The room itself is a warm and inviting place--large, uncrowded, clean, neat, colorful, with interesting materials and objects on display.

Student Contributions: Students make the classroom a good learning place by cooperating with each other and their teachers. They try to be quiet and calm, to obey the rules, to share and to help each other so that they can learn. They try especially hard to cooperate in these ways if the work is difficult. Students come to the classroom ready and willing to learn. They pay attention and listen to the teacher. They study, practice, and try hard to complete their work. Students help to decide on rules for the classroom. At times they also help to decide on what they will study.

Teacher Contributions: Teachers make the classroom a good learning place by explaining things clearly, reviewing lessons often, helping students when they need it, and making sure that everyone understands before moving on. They are organized and well prepared. They are also kind, consistent, understanding, and willing to listen.

Approaches to Learning and Classroom Organization: Students learn many different things in many different ways. Learning is often playful and fun. Students are allowed to move around, and to use interesting materials and objects like math cards, globes, computers, animals, books, art supplies. They are often involved in fieldtrips, experiments, simulations, and learning games. Enough time

is provided at home and at school for study and practice. Break time, when students can snack and talk or play games with their friends, is also valued as an important part of the school day.

Educational Systems Design by Children for Children: Priorities and Comparisons

The children's priorities for educational systems design are reflected in the preceding scenario. In light of their preferences, what priorities should guide educational policy development and program evaluation? How do the students' priorities compare to those identified by their teachers? In what ways do they reflect priorities revealed through prior research?

The top priority identified by students participating in this study is that of maintaining emotionally positive and supportive classroom atmospheres. Both at the beginning and at the end of the Delphi process, students indicated that this element is significantly more important than all other elements of classroom design. Their assumption that such environments are essential to the promotion of learning is shared by their teachers and documented by a significant body of prior research. In comparison to all other aspects of student perception, assessments of emotional and social atmospheres are most frequently and comprehensively investigated (Fraser, 1980; Moos, 1979; Walberg, 1976). Upon completion of a metaanalysis of such studies, Haertel et al. (1979) concluded that student perceptions of psychosocial climate consistently account for variance in learning outcomes beyond the variance accounted for by ability. Learning gains are positively associated with student-perceived cohesiveness, satisfaction, formality, goal direction, and democracy while negatively associated with friction, cliques, apathy, and disorganization.

The students also indicated that the quality of classroom atmosphere is strongly dependent upon the quality of social relationships among members of the classroom community. High quality relationships are characterized by feelings of mutual trust, acceptance, and belonging. Although it is clear that the students value open and supportive relationships with their teachers, relationships with their peers assume special significance. In response to student interest expressed in Round 1, eight of the 40 Delphi statements explore aspects of student/student interaction. Seventy-four percent of the children agreed that they learn more and understand better when they have friends in the classroom. Student priorities revealed in these results reinforce a central finding acquired through almost thirty years of student attitude research which suggests that students of all ages perceive relationships with their peers as the most important and enjoyable aspect of schooling (Coleman, 1961; Boocock, 1976; Davies, 1982; Goodlad, 1984; Lickona, 1988). The importance attributed by young people to this issue is also well supported in studies documenting positive correlations between peer interaction and academic achieve-

ment, socialization, and emotional development (Johnson et al., 1975; Johnson, 1981; Slavin & Oickle, 1981; Slavin, 1983).

The second priority dominating the students' descriptions of positive learning culture is that of cooperation. From their perspective, maintaining an emotionally positive and supportive classroom atmosphere is largely dependent upon the level of cooperative behavior displayed by students--cooperation is their primary responsibility and primary contribution to the learning process. The students' emphasis on being kind, fair, respectful, and helpful is interesting in light of an observational study of elementary classrooms recently conducted by Blumenfeld and Meece (1985). Although the teachers rarely talked to students about moral expectations or priorities, emphasizing instead classroom procedures and academic performance, the students rated moral norms as most important and attached greater affect to adherence or violation in this area.

Although the children participating in this study attributed greater importance to their role in maintaining positive classroom atmospheres, they also acknowledged ways in which teachers can be helpful. Their responses are consistent with results of prior studies, indicating that from the perspective of young students, teachers contribute by responding to students as valued individuals--displaying empathy, warmth, support, accessibility, respect--and by maintaining a safe, orderly, and somewhat predictable environment (Freese & West, 1972; Buxton & Prichard, 1973; Moos, 1979; LaBonty & Danielson, 1988). One aspect of cooperation attributed importance by the students, but not by their teachers, is that of not disturbing classmates. In response to the statement, "Students would learn more and understand better if this classroom was quieter and less distracting," 68 percent of the students expressed some level of agreement, while 62 percent of the teachers disagreed. As both an initial and final theme, the importance of being quiet and non-disruptive is well represented in the students' responses, although seldom raised by their teachers.

Moving from social/emotional aspects of educational design to academic/instructional ones, the students' responses suggest that learning is promoted when teachers explain concepts, assignments, and expectations clearly; are sensitive to their needs for further review and elaboration; and are well prepared and well organized. The students' concerns for organization and preparation were shared by their teachers. The teachers' assessment of their own responsibilities varied from the students' in that teachers attributed greater importance to the level of enthusiasm they display and seldom identified the quality of teacher explanations as essential to promoting student learning. The students' prioritization of quality explanations is, however, reflected in recent research. During of a study of upper elementary children's attitudes toward teaching styles, Cedric Cullingford (1987) discovered that his participants were more concerned with communication of expectations and information than with the types of instructional methods adopted or with aspects of the teacher's personality. Rather than attributing learning

difficulties to the complexity of the subject matter, the students pointed to lack of clear explanations. They expected teachers not only to know the subject, but also to know how to explain it and how to vary explanations for students who did not understand. Cullingford also found that explanations to the entire class provide a sense of cohesion and security for young students. Results of other studies demonstrate that although adults tend to assume reciprocity of perspectives when interacting with children, children cannot always guess, infer, or intuit what teachers intend (King 1979; Winne & Marx, 1982; Duke, 1987; Reifel, 1988). Misunderstandings, due to lack of clarity or contradictions inherent in teacher messages, or to developmental limits in children's understanding, are common (Weinstein, 1983). Such misunderstandings clearly interfere with learning.

The Delphi findings also point to priorities with respect to instructional methods. The students prefer playful, active, peer-oriented approaches to learning. Related priorities include use of life-like interactive materials, opportunities for student-directed learning, and the importance of scheduling times for relaxed, playful interaction throughout the school day. Enthusiasm for such techniques was expressed by the teachers and is well reflected in decades of educational theory and research ranging from the teachings of Dewey (1938) and Piaget (1958), to studies of primate socialization (Lancaster, 1975; Chalmers, 1980), to prior investigations of student opinion (Farley, 1975; Wang & Stiles, 1976; Davies, 1982; Cullingford, 1987). Both student and teacher responses further suggest that learning is enhanced through use of a wide variety of instructional methods. Similar to the students involved in Cullingford's study, and reflecting general findings gleaned from learning styles research (Messick, 1976; Dunn & Dunn, 1978; Witkin & Goodenough, 1981), the children acknowledged the value of utilizing multiple approaches to address varied academic interests and needs.

Student Evaluations of Current Learning Cultures

In light of the priorities identified by the children, to what extent were their needs fulfilled within their current learning environments? The results reveal both areas of satisfaction and opportunities for improvement.

First, the students were generally happy with their performance in terms of self-discipline and self-motivation (coming to class ready and willing to learn, often listening and paying attention, often working hard and feeling proud of their work--level of consensus of approximately 70 percent). However, their responses to Delphi statements concerning peer cooperation and support--an issue which they evaluated as highly important--were mixed (students often cooperate with each other and work together well, students respect each other and don't do or say mean things, students often help each other learn, students help each other to feel good about themselves and their school work--level of consensus ranging from 46 to 48 percent). Although the teachers appeared satisfied with student performance

in this area (more than 70 percent reaching consensus for the preceding statements), these findings suggest that the students might benefit if assisted in improving the quality of their peer relationships.

Second, the students were generally pleased with several aspects of teacher performance (knowledge about individual students including understanding of their learning style, frequency of high quality teacher preparation and organization--level of consensus approximately 60 percent). However, their responses to statements concerning the quality and extent of teacher explanations were somewhat ambivalent. Approximately half of the students could not agree that teachers usually have enough time to explain things clearly, to answer questions, and to provide help when necessary. Additionally, 60 percent agreed that they could learn more and improve their understanding if lessons were more frequently reviewed.

Third, although the students indicated satisfaction with a number of factors related to the quality of classroom atmosphere (they did not feel rushed, hurried, crowded, or confused about rules), they did suggest that a quieter, less distracting environment would enhance their opportunities to learn.

Because student evaluations of their current learning environments varied by organizational type, their participation in the Delphi was also helpful in evaluating the relative success of the organizational innovations in which they participated. Significant differences were indicated for 18 of the 40 Delphi statements. These findings, along with data collected through systematic observations, were aggregated by similarity to reveal related behavioral and conceptual patterns.⁹ Upon completion of this analysis, the three classroom types showed differential effects and frequencies for concrete, interactive learning patterns in which students learn with and from their peers; and for patterns which produced open, comfortable and caring emotional climates. Rescheduled and combined classrooms provided more opportunities for active, engaged learning, and had more success in using these methods. Multi-aged classrooms, however, were more successful in producing the emotionally positive and supportive learning atmospheres most highly valued by the entire population of students.

Listening to Children's Voices: Implications for Policy and Practice

As indicated in preceding sections, several of the children's design priorities reflect those valued by adults. Others, however, are unique to the children in that they are neither represented in teacher responses, nor are they well addressed in contemporary educational theory and research. In what ways do the children's insights challenge or encourage reconsideration of themes or assumptions which currently dominate processes of educational inquiry? In what ways might educational policy and practice be enhanced if children's perspectives were taken

seriously? Although this study is exploratory in nature, the findings suggest that we could honor children's experience and perceptions by focusing increased research, design, and evaluation efforts on two primary issues.

The Quality of Student/Student Interaction: From the perspective of the child participants, a nurturant classroom atmosphere, created and sustained through academically- and emotionally-supportive peer relationships, is most essential to the development of effective and empowering learning cultures. As such, their insights reinforce humanist (Rogers, 1983; Combs, 1965) and feminist (Weiler, 1988; Schniedewind & Davidson, 1983) concerns for the social and emotional welfare and development of young people, and the emphasis of biocultural (Kimball, 1982; Dobbert & Cooke, 1987) and cooperative learning theorists (Johnson & Johnson, 1975; Slavin, 1983) on peer interaction. Their priorities challenge, however, the large volume of studies predicated on assumptions that the nature of curriculum and instructional methods and the quality of teacher/student interaction are more significant in promoting learning. Because to a large extent recent research and reform efforts are grounded in an individualistic, academically-oriented, teacher-centered model of educational process, few studies investigate the nature and implications of student/student interaction. Similarly, because adults generally perceive peer interaction in the classroom as bothersome, non-productive, or disruptive, rather than promoting and supporting the development of students' social relationships in terms of educational policy and practice we actively work to stifle them (Johnson, 1981).

Why do children view this aspect of classroom life so differently? Why do students believe that both the quantity of their learning and the quality of their understanding are enhanced when they have friends in the classroom? One possible explanation is provided by the primary-school children who participated in an ethogenic study conducted by Bronwyn Davies. Their perceptions of friendship proved to be central to Davies' attempt to discover how children interpret their experiences in the classroom and on the playground. Their responses imply that when children enter the classroom they enter a strange new world, a foreign culture constructed by adults. As explained by Davies,

Making sense of this strange new world is a task they engage in with each other. The teachers may spell out the rules for classroom behavior, but the sense to be made of it all is something adults cannot really provide. Friends are the source of meaning and therefore a source of identity. They can, by their presence and shared meaning world, render the world a sensible and manageable place. (1982, p.70)

Along with the findings of this study, Davies' results suggest that we might enhance our designs for policy and practice by first devoting significant research efforts to exploring with children the nature of student/student interaction and the impact of peer relationships on varied aspects of the learning process. Contingent

upon the results, we could then work with children to develop instructional programs and organizational arrangements¹⁰ which provide preparation and support for students as they engage in cooperative and nurturant peer-oriented behavior.

The Nature of Students' Contributions to the Learning Process: Research designed to identify ways in which children actively work to promote learning, independent of adult direction or support, is virtually non-existent. Results of this study suggest that children's efforts to encourage their own and their peers' development are not readily apparent to adults. When classrooms are assessed from an adult perspective, some student contributions are likely to remain hidden. For example, from the students' perspective a quiet environment, relatively free from distractions, helps to promote learning. Perhaps because being quiet and non-disruptive requires significant effort on their part, children perceive such behavior as a contribution. In contrast, their teachers--in response to their own priorities and/or pressure from parents, administrators, researchers, and policy-makers--become so focused on their role in managing and controlling the classroom that the children's efforts to manage and control themselves, and perhaps their peers, are overlooked.

Adults attribute to other student contributions levels of importance incongruent with those assigned by children. For example, the students saw their role in maintaining positive social and emotional atmospheres as primary; their responsibility to be ready and willing to learn, and to sustain focus on academic activities, as secondary. From the perspective of teachers, this ranking was reversed. Additionally, although contemporary educational theorists and reformers have advocated increased student initiative and participation in creating knowledge, assuming instructional and evaluative roles, and directing classroom activities (Neill, 1960; Freire, 1972; Bunch & Pollack, 1983; Wigginton, 1985), these types of contributions are not reflected in student responses. While the students did express interest in choosing what they would like to study, their responses did not demonstrate significant interest in assuming instructional or directive responsibilities.

Why did the students' fail to acknowledge a potential to contribute to the educational process in pedagogical and administrative ways? Why did they not suggest that in addition to having much to learn, they also have much to teach? Are they incapable of imagining that students could perform such non-traditional roles, or do they believe that children are incapable of doing so? Would they prefer not to assume such responsibilities? Do children find other roles more important or more appealing? Or do their responses reflect awareness of one important aspect of the school's "hidden curriculum," an understanding that schools are essentially adult institutions, designed and operated in order to address adult needs, interests, and values (Davies, 1982)? Are invitations to assume roles traditionally assigned to adults interpreted by children as an unwillingness on behalf of adults to fulfill

their rightful responsibilities, or are such invitations welcomed as avenues for empowerment? Discovering the answers to such questions is essential if we are to enhance children's sense of security, self-worth, and social value in educational settings. Movement toward educational policy and practice that is respectful of children's experience and perceptions may be promoted by efforts to collaborate with young students in developing a more sophisticated understanding of their actual and desired contributions to learning environments.

Children's Perceptions and the Foundations of Education

The results of this study demonstrate that children are capable of devoting serious thought to issues of classroom design and evaluation. In addition to reinforcing perceptions and priorities identified by those more commonly involved in policy deliberations (i.e., teachers and researchers), responses of the third-, fourth-, and fifth-grade students provided several distinctive insights into the nature of classroom process and identified key issues to be addressed in future research. And their performance is not unique. The potential of children and youth to contribute to theory-building and policy-development in education is also confirmed by the results of prior studies.

For example, based upon his review of research on student cognition, M. C. Wittrock (1987) contends that knowledge of student beliefs and attitudes is essential to our understanding of academic achievement. He notes that contrary to widespread assumptions, self-assessments of attention provided by students correlate more highly with student performance than do researcher estimates of students time-on-task (Peterson et al., 1982; Peterson et al., 1983). Other studies indicate that student explanations of their failure to achieve can provide invaluable insight concerning their special needs (Amos & Washington 1960; Albert & Beck, 1975; Klein, 1975; Fine, 1986; Farrell, et al., 1988). Daniel Duke (1987), for example, suggests that many teachers misperceive apparent student disinterest or refusal to cooperate as an indication that they don't care about their schooling. Research on student perceptions, however, shows that in reality such students care too much--in response to what they perceive as teacher or institutional insensitivity, adopting an uncaring attitude is their only recourse. Correcting such misperceptions can result in improved academic performance, self-discipline, and interpersonal relationships among "at risk" students and their teachers (DeCecco & Richards, 1974; Duke & Perry 1977). Additionally, the role of student perceptions in providing diagnostic and prescriptive information to assist teachers in individualizing instruction (Tetenbaum, 1975; Pollard, 1985), improving accuracy of student learning style determinations (Dunn et al. 1977; Marcus, 1977), and identifying more effective learning strategies (Wang & Styles, 1976) has been documented. To summarize, the results of this study, along with others

preceding it, suggest that our understanding of processes of teaching and learning, and the nature of classroom life, is enhanced when informed by children's points of view.

Yet it is not likely that efforts to include children's perspectives will move from the margins toward the center of educational studies until the broader social and philosophic implications of such endeavors are more widely acknowledged and understood. Just as the focal questions and methods of research have changed in response to growing awareness of the politics of gender, class, and race in social and educational settings, so too must socially-prescribed inequities associated with age be acknowledged in the process of educational inquiry. We live in an adult-centered, age-segregated society dominated by assumptions and expectations which actively limit the conceptual power of children. By conceptual power I mean the ability to construct, validate, and disseminate knowledge--to name one's reality and then to have one's perceptions responded to in a respectful manner. In this society, children are rarely afforded such opportunities. The consequences of epistemological exclusion are well defined by feminist theorists (e.g., Thorne, 1987; Narayan, 1988). When members of a powerful group attempt to learn about members of a less powerful one, the experiences and perceptions of those under study are frequently misinterpreted--the results filtered through unacknowledged political interests, biases, and stereotypes. Because nearly all studies in child and youth development are conceptualized and conducted exclusively by adults, prevailing images of what it means to be a child, and what it means to be educated as a child, are called into question. In order to construct more accurate representations of childhood experience and more valid theories of child development and learning, children's perspectives must be integrated throughout all aspects of youth-oriented research. Rather than limiting young people's scholarly contributions to those they have traditionally provided as research subjects, foundations scholars are called upon to work creatively with children in selecting areas of inquiry, designing methods, conducting research, and interpreting, disseminating, and applying results.¹¹

Moving beyond epistemological concerns, it is essential to consider the ethical implications of age-related exclusion. Children lack not only conceptual power, but also political power. In our society, opportunities to exercise social responsibility and influence are withheld until reaching an arbitrarily defined state of maturity, rather than granted on the basis of demonstrated or developing competence. Thus children--regardless of their individual talents, concerns, or aspirations--are systematically excluded from assuming active and meaningful roles in guiding the development of schools and society. Because we ignore the intelligence that children bring to social settings, and assume they are not qualified to advise on their own behalf (Goodman, 1970; Roberts, 1970; Duke, 1987; Weinstein, 1983), children are rarely afforded opportunities to shape the social structures and processes which dominate their young lives. As the role of schooling

in promoting social justice continues to serve as a focal point for educational studies, foundations scholars are challenged to expand current conceptions of democracy and pluralism to include commitments to ensuring adequate representation of, and response to, children's educational concerns and interests. Again we are called upon to work creatively with children, this time to increase their voice and influence in processes of policy design and evaluation. If we are unwilling to accept age-related patterns of exclusion and discrimination, then educational systems design by children for children assumes a central, rather than peripheral, role.

Notes

1. See, for example, National Commission on Excellence in Education, *A Nation at Risk: The Imperative for Educational Reform* (1983); Task Force on Education for Economic Growth, *Action for Excellence: A Comprehensive Plan To Improve Our Nation's Schools* (1983); College Board, *Academic Preparation for College: What Students Need To Know and Be Able To Do* (1983); Twentieth Century Fund Task Force on Federal Elementary and Secondary Education Policy, *Making the Grade* (1983); National Science Foundation, *Educating Americans for the 21st Century* (1983).
2. For further discussion of this issue and supporting research see "The Roles of Youth in Society: A Reconceptualization," Kurth-Schai, 1988.
3. This study was conducted with Marion Lundy Dobbert, professor of education at the University of Minnesota. I would like to thank her for the insight, skills, and pleasure gained through working with her, and for the helpful critique which she so generously provided throughout preparation of this manuscript.
4. We have adopted the term *biocultural* to refer to a theoretical perspective on learning informed by anthropological and primate studies, and articulated by Herzog (1974), Kimball (1982), and Dobbert & Cooke (1987). The "bio-" side of this theory roots human learning processes in their biological nature. Because humans are biologically dependent on social interaction, their brains are structured to best receive information through socially interactive methods in stable, community-like groups. The cultural side of this theory grounds human learning in the critical features of human community life--the behavioral regularities, economic and political patterns, belief and value systems--necessary to sustain and govern society. The theory assumes that all of these factors must be taken into account simultaneously if educators wish to enhance understanding of the learning process.
5. Although originally developed as a quantitative method for acquiring expert consensus regarding technical forecasts, the Delphi has recently been more broadly defined as a method for enhancing group communication regarding complex issues (Linstone & Turoff, 1975). In light of this expanded definition, several variations of the original technique have appeared, including ethnographic variations (Poolpatarachewin, 1980; El-Shall, 1982; Palkert, 1986), those designed specifically to assist in the exploration and analysis of policy issues (Turoff, 1970; Rauch, 1979), and those adapted for use with children (Kurth-Schai, 1988).

6. All names referring to participating schools are pseudonyms.
7. Systematic observations were used to collect data concerning social and behavioral systems operative within each classroom. For a description of the procedure and discussion of results see "Evaluating Innovations in Elementary Education: Toward and Enhanced Quality of Classroom Life," Kurth-Schai & Dobbert, 1990.
8. In determining the level of consensus, percentages of participants selecting "agree" and "strongly agree" and "often" and "almost always" are grouped together for convenience in reporting results. Because this paper focuses on student policy perspectives, teacher responses to scaled statements are not presented in their entirety, although findings that are of significance when compared to student responses are discussed throughout the remainder of the text.
9. For example, observational data concerning behavioral indicators of emotional atmospheres (facial expression, emotional tone of remarks) were compared with scaled responses to Delphi statements designed to measure student perceptions of emotional climate. For further discussion of analytic procedures and results of the comparative analysis of organizational innovations see Kurth-Schai & Dobbert, 1990.
10. It is interesting to note that in this study, results of the systematic observations reveal that the quality of learner outcomes for similar classroom instructional patterns depend upon classroom social structure, with stable student populations leading to generally higher and more consistent numbers of students on-task and levels of student involvement in the learning. The importance of this factor is further reinforced by results of the Delphi. The students attending the multi-age classes, who did not experience a major change in group structure during the day, reported significantly higher feelings of happiness and satisfaction than did those from the rescheduled and combined classes where the group structure was more often disrupted.
11. Farrell's study cited earlier provides an excellent example of movement in this direction. Students from the population under study were hired to act as collaborators in the research process, rather than as informants. As such, they participated in identifying research questions, collecting data from their peers, and analyzing the results.

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