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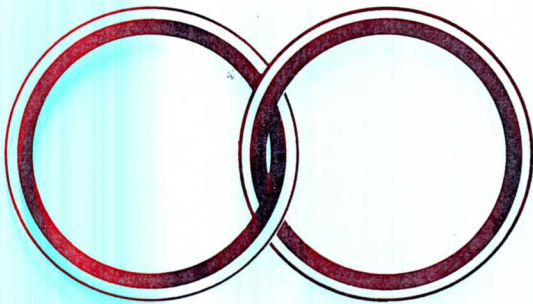
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Language and Action in First Grade

by
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There is, then, no difference in kind between verbal logic and the logic inherent in the co-ordination of actions, but the logic of actions lies deeper down and is more primitive; it develops more quickly and overcomes more rapidly the difficulties it meets, but they are the same difficulties...as those that make their appearance later on the verbal plane. (Piaget, quoted in Hawkins, 1969)

These words often return to me during my evening planning sessions when I probe my first-grade students' needs and my own teaching style and philosophy. They are the source of the title for Frances Hawkins' classic description of her work with profoundly deaf four year olds, The Logic of Action (1969). The poignancy of this quote is carried both by the cognitive implications for all who work with young children and by the increased meaning that actions hold in the silent world of deaf children. For me, the concept embodied in these words points directly to the heart of what I hope will slowly permeate our schools. If we began every day in our classrooms trying to comprehend the logic of action that our students exhibit, I believe we would be less easily derailed by the myriad detractions that cross our paths, and we might come closer to connecting with the mechanisms that drive cognitive development.

Holding these words in mind, I have, in my late night sessions, attempted to better understand how the theories of Piaget can clarify my curricular approaches. Talk of hands-on science and math manipulatives is common these days, but little is heard about "hands-on reading." Current trends in some parts of the country to replace basal readers with a "literacy-based" reading

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program could clearly tug reading instruction toward a more Piagetian approach. However, if we as practitioners cannot describe the underlying structures on which we base our curriculum or if new trends are not grounded in theoretical frameworks, many of the anticipated changes that could help children will in fact be absorbed by the pervasive teacher-centered, bureaucratically-controlled curriculum.

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Despite that rather negative statement, I am in reality an eternal optimist. I see in the schools where I teach many hard-working teachers, often dissatisfied with the teacher-proof materials they are expected to use. Given opportunity, encouragement and trust, they are eager and able to use their creativity and sound thought-processes to improve the teaching environment for themselves and, in turn, for their students. Thus I hope that my current attempt to apply the general sweep of Jean Piaget's theories to the daily reading tasks of six year olds will help to articulate sound reasons for the experience-based classrooms that our children and teachers deserve.

In the following pages I have hammered out a working description of Piaget's developmental epistemology and applied it to my pupils' learning styles and my own teaching practices. By doing this I have found many of my intuitive teaching practices convincingly justifiable, while I have had to question a number of school curriculum requirements, including several I use. These observations are the beginning of a dynamic process that helps evaluate my classroom and can help articulate the intuitions of other teachers. I have found it important, however, to keep two reservations before me--firstly, that all theoretical approaches are tentative and should be subjected to close scrutiny, and secondly, that current research suggests (e.g., Gardner, 1987) that rigid stages have much fuzzier, interconnected relationships than Piaget and others described. Beyond these cautionary words, Piaget's insights have provided me a valuable means for viewing my students' learning styles and behaviors.

Piaget's View of Cognitive Development

Piaget has described cognitive development in four developmental stages, each qualitatively different and each one subsumed by the one following it. Underlying these stages is the assumption that children are always active cognitively, that they are continually structuring their experiences to fit their existing cognitive schemes and that the quality of these experiences

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is significant. They assimilate and accommodate new information, and once it has become part of their cognitive structures, they re-present it through language or actions.

Life begins with the sensori-motor stage which lasts until approximately one-and-a-half to two years of age (Labinowicz, 1980; Gallagher & Reid, 1983). During this time infants develop action schemes and at about ten to eleven months, object permanence and presumably memory. Objects are used first as an end in themselves, being assimilated and accommodated with the senses and, later, as means to other ends. No language and very little representation are present. The second stage evolves from about two to six years of age. Called the preoperational stage, it is exactly that. Although young children at this stage exhibit intuitive thought and can often perform tasks, they cannot verbalize the reason; their logic is in the actions they perform. The semiotic function emerges during the preoperational stage, expressed first through imitation, then symbolic play and finally through language. Behavior is permeated by egocentrism, and they do not realize there is any point of view but their own.

Third of the four stages is that characterized by concrete operations from approximately six or seven years to eleven or twelve years. They can now perform logical operations with concrete materials, and thought structures are connected to concrete objects. Conservation emerges as well as an understanding of class and numbers plus the ability to reverse related operations. At about eleven or twelve years the preadolescent moves into the final stage of cognitive development that continues through adulthood, the formal operations stage. The young person can verbalize and explain the means for solving problems, does not require concrete objects to represent ideas or concepts and generally finds questions about conservation absurd. Deductive and hypothetical reasoning emerge, plus the abilities to use such intellectual tools as formal logic and negation. Although instructive, this list has a two-dimensional quality that requires the additional dynamics provided by a room full of young children.

Piaget, in his continuous effort to understand the mechanism that controls the development of these progressive stages, defined four interactive processes that augment them--physical maturation, physical experience, social interaction and, most important, equilibration. Though limited, some data suggest that when physical maturation influences cognitive growth,

possibilities for new behavioral patterns open up (Piaget & Inhelder, 1969). Physical experience, however, is more directly observable. As children interact physically with objects and their environment, the experiences provide a process for extracting attributes from the objects (e.g., a wooden ball is round, heavy and blue) and substance for reflecting on experience. They also learn negative attributes through physical experience; not only is the wooden ball round, heavy and blue, but it is not purple, cubic or light (Gallagher & Reid, 1983). Social interactions, especially family relations in the early years, have profound implications because they are presumably associated with motivation and achievement and set the stage for future development. A well-attached child can more readily move toward independence. Peer relations also motivate, impede or augment experience and observations, while social interactions in general help children see another's point of view, an important concept for the process of decentering.

Equilibration controls development at all stages; it is the most important process, and for me, the most difficult to comprehend. Extrapolating from Piaget's explanations, equilibration seems to be both the driving force and the self-regulator that interacts continuously with the active processes of assimilation and accommodation to push existing cognitive structures toward a new state of equilibrium (Piaget & Inhelder, 1969). Taking this explanation one step further, Ginsburg and Opper (1979) add that the child, in trying "to understand things, to structure experience, and to bring coherence and stability to the world," develops a system that is constantly adjusting toward a state of equilibrium. "The equilibration process is the mechanism by which the child moves from one state of equilibrium to the next."

For the purposes of applying a Piagetian perspective to the language arts curriculum of our primary schools, I think it is important to underscore two aspects of his theory. Firstly, Piaget has shown over and over again that the child's cognitive perspective is very different from the adult's. Furthermore, the child's actions precede articulation and even thought. "In the child... research precedes collated knowledge; and above all, the effort of thought remains for a long while incommunicable, and therefore less socialized than with us" (Piaget, 1970). Adding to this explanation, Ginsburg and Opper continue, "The child's language, especially in the early portion of the years from four or five or six years, does not entirely serve the function of communication. Often, the child does not assume the point of view of the listener; he talks of himself, to himself, and by himself" (Ginsburg & Opper, 1979). Secondly, children are continually structuring reality through interactions with the objects and individuals around them. What they make of these experiences is in fact their reality, and may not resemble reality as adults know it. For the young child, play is a critical factor in this process (Piaget, 1970).

The implications of Piaget's theories for primary school teaching are hard to ignore. His description of children demands an interactive environment, where they have the opportunity to structure their own experiences from a rich variety of sources. They need to be able to construct and explore, to interact with peers and adults within the learning setting. They need freedom of movement and the chance to follow an inspiration; they also need a teacher who can observe and think about them developmentally, and who can provide materials and opportunities that challenge.

Language and Reading--Traditional and Piagetian Viewpoints

A typical first grade class spanning the five, six and seven year old range generally includes, from a Piagetian perspective, a spread of preoperational and concrete operational developmental states. "Average" children, when they enter school in September, can write their names, recognize and use numbers to ten, know many, but not all, letters by name and can read a few words, although when asked, they say they cannot read.

Traditional curriculum expectations require that by the end of the first grade year these same children be able to write several sentences about a given subject, spell most three-letter words and have a reading vocabulary of several hundred words. In math these children will be able to add and subtract numbers to 20, read small fractions, count money including dimes, nickels and quarters and tell time to the half-hour.

Although teachers decide the specific teaching techniques for their class a majority of administrators prefer that the room be relatively quiet and that the children spend most of their time completing pencil and paper tasks. In the last ten or fifteen years, in many states, the first-grade curriculum has been driven by an all-out push to teach reading to all children, often by using criterion-referenced basal reader programs which place heavy stress on small components that, from an adult viewpoint, make up the reading process. In addition, spelling workbooks and sometimes supplementary language arts workbooks are part of the daily fare for these teachers and their students.

The "average" children in fact learn the required first-grade curriculum within a ten-month period. However, I would assert that the teacher-centered, top-down approach usually used in our schools is both inefficient and, in many instances, silly. If traditional curriculum is placed under the lens of Piaget theories, it appears that children learn in spite of this approach. They learn greatly because they are ready to learn; aided by their eagerness and motivation.

The basal reader programs, now under attack in some quarters, are a prime example of the adult trying to impose a point of view which in all likelihood is foreign and not very useful for a child at either the preoperational or concrete stages. The underlying theory of these programs, that the reading process consists of many small skills which, when combined into a whole, comprise reading, is logical for adults. But in my experience, many young children are often left puzzled. The child who has had a lot of experience with connected written discourse can assimilate and accommodate enough from the basal reader lessons to make sense of the process and begin to find success; but the child for whom the culture of the school is not familiar expends an enormous amount of energy and sees very little results (Heath, 1983). Thus begins a cycle of failure all too familiar for many minority and poor children.

A poignant example of the inappropriateness of basal readers lies in the heavy emphasis they place on beginning letter sounds. Often children cannot make the transition from buh-a-tuh to bat; the parts seem to add up to more than the whole. Also, although many publishers have tried in recent years to make beginning reading books more relevant to all children's lives, the limited nature of the preprimer vocabulary means that after the child has decoded the words, the meaning is nonsensical.

Throwing rocks is always easier than finding substitutes for the programs in error. However, in the case of reading and writing instruction, I believe that materials and curriculum already exist and in fact are used by teachers when all else fails or when they can squeeze a few minutes of relaxed learning into the busy, preprogrammed day. The children bring their curriculum to school with them and, as many teachers know, they would be more than happy to tell us everything they know. We need the skills to hear what the children are telling us and the courage to learn how to articulate the theories that underly our intuitions.

Some of Piaget's ideas related to language (1955) have helped focus the issues for me. Although considerably less extensive than his work related to logic and mathematical concepts, I find helpful his ideas on understanding the semiotic function and on the nature of child conversations. The development of semiotic function in the preoperational stage allows symbolization to evolve into more complex cognitive structures including the use and refinement of language as a tool for communicating, representing and, in fact, organizing some portions of thought. At a very young age, when a child pretends to sleep for example, a specific, known action is being represented. Later on, however, that specific action becomes a generalized symbol as the mental image becomes internalized. As the child increases the use of this type of symbolization it is overlaid, according to Piaget, by the acquisition of language, "providing a contact with other people which is far more effective than imitation alone, and thus permitting the nascent representation to increase its powers with the aid of communication" (Piaget & Inhelder, 1969).

To me this has two implications for teaching. Firstly, if children initially encounter the linguistic process as an outgrowth of symbolization, then presumably as they learn new symbols, language and concepts it would be useful, and perhaps essential, to continue this strategy of moving from concrete experience to symbolization. Secondly, when children connect to the symbolization process called language, they connect not just with a sophisticated symbol system, but with one that carries the traditions of their particular cultures and linguistic communities. The connection is presumably imperfect at first--that is, the understanding of a word or class of words or a linguistic structure may not be in concert with that of the adult community. The long and cognitively rewarding process of negotiating meaning becomes part of the nuts and bolts activities of the first grade classroom. For these two reasons alone, education should be experience-based.

In his early observations and investigations of children's language, Piaget found that almost half of their spontaneous speech in a "free school" setting was egocentric, characterized by repetition of another child's words, monologue or what he termed "collective monologue" when the children (age six) chose to work next to each other, but their talk was really for their own satisfaction. They neither expected an answer, nor received one, and were quite content with that situation (Piaget, 1955). He also found that developmental stages are communicated through language use. In his 1926 study, he found that children did not try to understand other people or to communicate objective thought until about age seven because they are still egocentric. Until this approximate age they have "no desire to communicate with others or to understand them." This is why the child is "able to invent as the spirit moves him, and to make so light of the objectivity of his utterances" (Piaget, 1955). Although we now know that

there are exceptions to this rigid categorizing, those who work with young children understand this phenomenon well. In the traditional class setting, however, the egocentric use of language is often at odds with the imposed subject matter.

September Realities in the First Grade Classroom

The variety of experiences and cognitive stages awaiting me each September is an impressive array of cognitive puzzle pieces, and my most important task is to become an astute observer. These 30 children are my best curriculum resource; they bring with them a rich background of experiences, interests, hopes and fears that are intimately entwined with their cognitive schemes.

In order to observe well, I need to allow time to watch, to take notes and to ask myself questions. I need to inquire about what individual children are doing and listen carefully to their responses for clues to their cognitive mechanisms. I need to begin to plan ways to construct a curriculum that will build on their current experiences. This is a much more efficient use of my time than trying to impose a foreign and often inappropriate curriculum on the children. Yet I find it distressingly difficult to ignore the reading workbook and periodic tests crowding my shelves.

I know that our traditional curriculum areas and, of course, life itself, provide ample material for interacting with oral and printed language. By using the world instead of the basal reader as the base for learning about print, the chances of each child finding a motivating area are much greater. If the interest is airplanes or making noise or making tortillas, a particular child or group of children can talk about it, learn new words or refine existing concepts, see words and sentences written down about it and dictate their own ideas about it. If a few then develop a longer-term interest in the topic and assimilate some of the related experiences, the motivational force may help drive their cognitive mechanisms to the point where reading is evoked.

I know that group experiences can encourage a change in classroom talk from egocentric monologues toward connected discourse, that there are thousands of possibilities--walks around the school or around the neighborhood, a watermelon feast, stories read again and again, imitations of animals or plays acted out. Many of them take less preparation time than required for correcting workbooks; provide a shared experience that all the children in the class can talk about and they cost less too! These plus the students' own lives can provide me more raw material than any basal reader. All can be a source of language enrichment, writing and reading, while at the same time allowing room for individual pacing, restructuring and accommodating as I build a base of common experience for the class as a whole.

Experiences and activities are essential before internalized, verbalized thought can emerge. This verbalization needs to come from the children when they are ready rather than be imposed by me. Some children will respond to lists of words or sentences about an experience; some will draw pictures and dictate their impressions or descriptions. If all of these become part of my usable classroom environment, then when children are ready, they can interact with things their peers are involved with and the peers in turn can help structure the material for each other.

I can now justify in theoretical terms the power of the "language experience" story. The uncanny ability of children who "can't read" to read the stories they have dictated is possible in part because both the experience and the speech patterns are their own. Rhymes, repetitious songs and stories with recurring patterns all seem to connect with the child's earlier and continuing experimentations associated with language acquisition.

To borrow from Malcolm Douglass, director of the Claremont Reading Conference, language should be evoked from children and become their tool to express their observations and discoveries (Douglass, 1983). Children can be helped to articulate their ideas more specifically and more fluently through individual conferences, peer or teacher questions and active listening by others, but in the long run, the words must be their own.

Perhaps most critical and also most difficult to learn is the ability to ask students questions which will help them find out more about their own cognitive development and that will help raise the intellectual conflicts that lead children toward accommodation. This is a skill little used in our lives generally and I find that a teacher-centered, tightly controlled curriculum provides little room for practice.

I can continue on and on with ideas for "hands-on reading," but the critical problem is to create an atmosphere in the schools, little by little, that can make room for less authoritarian approaches than are common today. I believe we cannot achieve this, however, unless those of us in the classroom have the courage and knowledge to articulate sound theoretical reasons for the need, and model the success of such an approach in our own classrooms. Although it would be easier to wait for others to kindle the revolution, each one of us must recognize that we are the revolutionaries, as uncomfortable as that role may be for elementary school teachers.

Conclusion

I have tried to link the basic theories of cognitive development outlined by Piaget with the needs of my first-grade classroom. I view this as a preliminary step toward helping myself and other primary school teachers articulate a philosophy of education that places the child's learning powers centerstage. Young children will continue to control their own learning. They will approach it with their own styles and by their own rules, and they will derive from the adult world those concepts and structures that are appropriate for their understanding at a given point. They will follow the logic of their own actions.

I began this article with a reference to Frances Hawkins' book, Logic of Action, and I want to take the liberty to quote a passage about Brooke, one of the profoundly deaf children who asserts herself throughout the pages. Brooke, for me, stands as a vivid reminder of the task we educators must be about.

Some of us believe that to tamper with a child's already deeply bestowed attention is to court trouble. One can minimize this with a speaking and hearing child, but the silence of the deaf induces endless brazen interference. Brooke...has pitched her will against such attempts...

I keep an early picture of Brooke in mind as a paradigm of communication about these matters. She once turned to me as she left a situation in which I was bidding for her attention with small blocks and gave me a grin with a finger shake, mischievousness just hidden. She seemed to say, "I am finished with those matters you still offer and now I must get on with my own affairs." If important moments are to count, I believe the directive is clear. We must sharpen our skills for observing the outward evidence of inner involvement--of that logic of behavior--so that, as teachers, we can build upon it not tear it down. (Hawkins, 1969, pp. 99-100)

This says more than all the angry fists we can shake at wrong-headedness in education. The answers lie with us as individual practitioners of the craft of teaching using the richest curriculum resource of all, brought to our classroom within each child. Our greatest task is to listen hard, to build on the students' leads, a task that is as exquisitely difficult as it is easy.

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