Education and Human Development

James Gallagher, Ph.D.
Associate Professor :
ABAC Graduate School of Business
Assumption University

Introduction

In developing a philosophy of education, one must have a strong awareness of how children develop. Such an awareness allows the formulation of curricula which are appropriate for a class' developmental age and suggests teaching techniques which will optimize the learning process. The educational process is intrinsically connected to the total process of development in the child and thus developmental theory provides a crucial foundation for educational theory and practice.

However, education is not simply identical to child development and it is impossible to reduce the educational theory to child development theory. Child development theory is generally concerned with those aspects of the development process which are relatively invariant, which cross cultural boundaries, and mainly considers the development of broad skills and struc-tures of the personality. Education, however, is more involved in providing the child with specific skills and knowledge which will be necessary to function within a particular culture. Education seeks to develop not a "generic person" but a member of a particular culture (although modern life requires that such a person also have an understanding of and a sensitivity to other cultures). That is, the educational process is by its very nature involved in the transmission of cultural norms (Dreeben, 1968). Even teaching such seemingly value-neutral course materials such as science is involved with the transmission of norms: the modern sciences are disciplines which involve value systems of objectivity which are based very much on the Western tradition (although that tradition, it must be admitted, increasingly dominates the entire world).

Spodek (1978) well characterizes the relationship between child development theory and education. Child devel-

opment, he notes, is a descriptive science which informs us concerning what is; education, on the other hand, must concern itself with what should be. Child development theory at best imposes limitations upon educational practice (through the definition of educational readiness) and provides hints on appropriate practices. Education must build upon what it learns from child development theory and uses that information to guide development in accordance with the norms of the culture and the skills and knowledge which are tied to those norms. For example, by placing a strong emphasis upon reading skills, it prepares a child for life in a culture that requires its members to achieve literacy in order to live productive and satisfying lives.

Thus, unless educators define the norms upon which the educational process is intertwined, their efforts will at best be floundering and ineffective. This is a problem which is particularly difficult in a multi-cultural democratic society in which the societal norm rejects any single educational goal, single system of values and path of personal development, to which all children should be guided. It is the essence of the democratic life that all should be allowed to pursue their satisfactions and happiness in accordance with their own values and interests. The purpose of the school in such a society must, therefore, not be to teach the student specific norms or a specific picture of the nature of the world, but to allow the child to explore the world and to maximize his or her own awareness of what is occurring around them. This educational goal is

well stated by Dearden (1968) in the following passage on the importance of educating children for personal autonomy:

> There are two aspects to such an autonomy, the first of which is negative. This is independence of authorities, both those who would dictate or prescribe what I am to believe and of those who would arbitrarily, direct me in what I am to do. The complementary positive aspect is, first, that of testing the truth of things for myself, whether by experiment or by a critical estimate of the testimony of others, and secondly, that of deliberating, forming instances and choosing what I shall do according to a scale of values which I can myself appreciate. Both understanding and choice, or thought and action, are therefore to be independent of authority and based instead on reason. This is the ideal (Dearden, 1968: 20).

That is, the educational process should help children think and act for themselves rather than imposing a view of the world and a detailed model for behavior upon them.

In one sense, the American education system is well-suited for such a task. Wieck (1976) has characterized the educational system of the United States as "loosely coupled", as not subject to rigid hierarchical control or norms. This allows persons and groups with various interests and values to work within the system without, at least theoretically, subordinating themselves to a single dominant group. Because the educational process is not rigidly controlled from above, there is at least a potential for a democratic education which would enhance personal auto-

nomy in the child.

Unfortunately, traditional educational endeavors have all too often subverted this potential. Instead of teaching children to explore and get their own picture of the world, education has frequently been identified with the teaching of specific facts and techniques. For example, instead of presenting history as the story of human endeavors to come to terms with the world and with each other -- processes which are analogous to the developmental process in which the child is him or herself engaged -- the subject has been presented as a set of events and dates which are rarely related to the child's endeavors or personal world. Cohen (1972) has commented upon "the traditional emphasis on the factual, the unambiguous, and the measurable" (p. 7) and the relationship of that emphasis to an educational philosophy based upon values of "conformity" (p. 7) and a concept of human beings as "helpless, passive, and dependent upon a stronger or higher power for direction" (p. 13).

In this traditional view of learning, knowledge is seen as a static, predetermined, body of information which must simply be accepted by the student. It constitutes "the way things are." Opposed to such a static concept of knowledge is a process oriented knowledge which exists as an ongoing struggle to think about, test and, in general, to come to terms with the world (Berlak & Berlak, 1981). This latter form of knowledge is not only most closely related to an educational system that seeks to maximize personal autonomy but also is most appropriate to a

world which, like the one we live in, constantly calls into question and expands accepted bodies of knowledge. In past history it may have been possible to lead a reasonable life from within the context of the commonplaces of an accepted body of knowledge. In the modern world, however, the need for constant and rapid intellectual, emotional and personal adaptation is such that it is imperative that we educate our children to be able to think for themselves.

The commonplaces of a fact-oriented education are not only of limited value but they also tend to be detached from the overall life of the child. Although schools must teach basic skills, that teaching should not be so exclusively intellectual that it neglects the development of the overall personality of the child (Biber). To provide isolated knowledge detached from considerations of personal growth is, at best, to educate technocrats rather than democratic citizens.

The goal of education in a modern democracy should be providing children with the means to come to terms with their world, to be able to think about it and act within it in accordance with its reality and in accordance with values which they themselves define for themselves. Education is a part of development and it thus cannot reduce itself to a technical task of providing necessary basic skills and information to children: it must help those children to live within and creatively respond to their world in an intellectually and emotionally responsible manner.

Developmental Theory

The two general types of education which were described above can be related to two very different models of child development and, more broadly, two wider cultural / intellectual traditions. In considering education in the context of developmental theory, therefore, it is useful to examine these theories of development in turn.

It was noted above that the educational practice which treats children as passive receptacles of information is not as appropriate to a democratic system in that it discourages the active pursuit of personal values which is at the heart of the democratic norm of individual autonomy. Ironically, this educational practice has its origins in a theory of child development which has its origins in the same empiricist philosophy which was so crucial to the development of modern democratic political values. The empiricist philosophers, such as Locke (1959), believed that human beings were born as "blank slates" and that all development came about through their subsequent experience of the world and intellectual operations upon the mental images and concepts which were derived from that experience. Personal development had no inner structure, no overall pattern, and was based simply upon the accumulation of experience. This, of course, relates closely to the piecemeal accumulation of knowledge which is characteristic of the educational tradition which Cohen criticized in passages quoted above.

It is easy to see how this theory would be helpful in the initial stages of democratic development. By maintaining that human beings had no set nature, by making them a blank slate, the theory emphasized the potential of all human beings. Any human being could, with the right experiences, develop in any direction. This tendency towards an egalitarian view of the human being was extremely radical in a world in which people were divided into rigidly separate social groupings and not generally allowed to move from one group to another. If all people have the potential to develop in any direction, social constraints which hinder such personal development are immediately called into question. It is not accidental that Locke was both a founder of this view of the human being and one of the major early theorists of democracy.

However, radical its original implications may have been, the empiricist theory does have its shortcomings as a theory of personal development from a democratic standpoint. Most particularly, this standpoint makes human beings utterly passive in the face of determining experience. Although it allows human beings an almost infinite number of paths of development, this passivity provides no clear means by which a person can choose to pursue one of these paths. Any course taken in life will simply be determined by the experiences to which one was subject.

This passivity can be seen clearly in the work of B.F. Skinner (1953), whose behaviorist theory of learning and development is a distant descendant of the empiricist tradition. Like Locke, Skinner sees human behavior (and for Skin-

ner, unlike Locke, human existence is largely reducible to observable behavior) as being determined by experience. However, Skinner's theory of learning narrows developmentally relevant experience to two kinds: those that provide pleasure (positive reinforcement) and those that provide pain (negative reinforcement). A child -- or an adult -- learns to act in the world so as to avoid what has in the past been associated with pain and to seek what has in the past been associated with pleasure. There is no free will in such learning, only a response to events. Although later work in behaviorism has, through the development of such concepts as observational learning (Biehler & Snowman, 1982), moved away from this extremely mechanical model, the basic implications of behaviorism remain the same.

Skinner, in fact, himself emphasizes how far his ideas are from notions of personal freedom and autonomy (Skinner, 1971). In his rejection of the idea of an "autonomous man", Skinner moves away from any sense that human beings are capable of self-directed activity towards a one that implies that the environment is all controlling. The educational implications of this theory are very radical, as is demonstrated by Skinner's fictional educational utopia which is, in essence, a place of social engineering where human beings are, through techniques of reinforcement, programmed to learn and to act in certain ways (Skinner, 1948). The passivity which has always been inherent in, although not always recognized within, the empiricist tradition comes to the

fore in behaviorism. For Skinner, a human being is more or less a piecemeal accumulation of elements of conditioning that have been received throughout life.

Such a behavioristic view might deeply conflict with a theory of human learning and development which emphasized active learning. Thus, if the evidence for behaviorism were strong, the educational philosophy of personal fulfillment and autonomy outlined above would have to be reconsidered. Recent psychological thought has moved away from the passive notion of human beings which had been provided by behaviorism. The work of Piaget, Kohlberg and others indicates that learning is not simply a passive process, that the child is inherently motivated to operate upon and to make sense of his or her world (Wadsworth, 1971). Instead of simply accumulating information and patterns of behavior, as is implied within the empiricist and behaviorist traditions, the structuralist developmental theorists see the process of learning as one of progressively developing pictures of the world (schemata) and trying to assimilate diverse experience into those pictures. Where the experience does not easily fit, the child must revise his or her schemata so that it more adequately is able to assimilate experience. Instead of being passive in the face of experience, the child here must act upon it (both physically and mentally) and come to terms with it.

This process is not, however, an entirely individual one. In both Piaget's theory of mental development and Kohlberg's theory of moral development

the child proceeds from schemata to schemata in series of stages that are the same from child to child. Faced with relatively similar experiences (even in diverse cultures the laws of physics remain the same) and similar biological make-ups, children develop relatively similar mental pictures of the world and ways of acting within it.

This has an extremely important application in the idea of educational readiness. Information and techniques can only be assimilated by students if they have previously developed schemata which can handle it (Piaget, 1971). It makes no sense, for example, to present ideas of historical causality to children who have yet to fully master even the causal relations within the physical environment. Although recent work has tended to show that the stages of development are not as invariant as it first had seemed (Gardner, 1985), this work does provide guidelines upon which curricula can be based.

What is most important, however, is that development is not seen as a passive process. Children are seen in a dynamic relationship with his or her world and they constantly must explore and come to terms with that world. The active nature of learning in Piaget's theory comes out well in the following passage:

> Experience is always necessary for intellectual development...but I fear that we may fall into the illusion that being submitted to an experience (a demonstration) is sufficient for a subject to disengage the structure involved. But more than this is required. The subject must be active, must transform things, and find the structure of his actions on the objects (Piaget, 1964: 4)

The world is not, as it is within the empiricist tradition, just a random accumulation of experiences; it is a mental picture which the children construct for themselves.

Piagetian theory, like any development theory, cannot be mechanically applied to educational practice; if education were reducible to the fulfillment of Piaget's stages, it would not be necessary: that broad development does not need to be taught, it simply happens as the child interacts with the world (Ginsburg, 1981). As Wadsworth (1971) nicely puts it: "Piaget has been concerned with how concepts develop and not how to develop concepts." (p. 132)

However, the theory not only provides, through its description of readiness, guidelines on which to build curricula but also its active view of learning provides the basis for educational curricula which are based upon allowing the child to explore the world and to come to terms with it for themselves. This is very much in line with the values of personal autonomy which a democratic education should foster.

A limitation of this theory, however, does exist in its strong emphasis upon intellectual learning. Piaget's stages bring the child along a path of greater and greater abstractness until, in the formal stage, the child can, like the scientist, operate on the world in a purely abstract manner. However, education cannot simply be reduced to the development of such formal capacities. While they may be appropriate for mathematics, the study of such areas as

social studies (as well as the development of the personality) necessarily involve values, emotions and other factors not readily treatable within Piaget's framework.

This is, in fact, explicitly acknowledged by Piaget in the following passage:

> We are omitting the means of metaphysical and ideological knowledge because they are not kinds of knowledge in the structural sense but forms of wisdom or value coordinations, so that they represent a reflection of social life and cultural super-structures rather than any extension of biological adaptation. By this we do not mean to dispute their human importance; it simply means that the problems are quite different and are no longer the direct province of the biological epistemologist. (Piaget, 1971:268)

That is, those aspects of social life which are not directly tied to (although they are certainly built upon) Piaget's developmental scheme are excluded from consideration of his theory. Yet, it is clear that the personal development which the school should foster and many of the subjects which are taught in school are very much involved with the social/cultural "superstructures" which Piaget excludes. Gardner's views are thus much more in line with Biber's (und.) belief in the use of the school to develop the whole personality than are those of Piaget.

This has been a matter of some comment in recent years. Sullivan (1977), for example, criticizes both Piaget and Kohlberg for an overemphasis upon cognitive development. This author particularly objects to the small role given to the imagination in the rationalist models of these authors. Similarly, Gardner (1985), in a work which provides an extensive critique of Piaget's model of a single linear pattern of development, identifies several distinct (though interacting) intelligences which can develop (or not develop) separately. For Piaget, development consists of a linear road towards the ability to think abstractly (formally); for Gardner, development is a much less narrow process which also involves spatial, physical, and personal abilities. That is, Gardner's theory allows the incorporation of those crucial aspects of human life that Piaget excludes from his analysis.

This line of criticism has strong educational implications. Sullivan's emphasis upon the imagination as the "thorn" (p. 23) in the side of rationalist developmental theorists emphasizes that education need not be tied down to a single view of the world. Children have an amazing capacity for imagining alternate worlds and this should not be excluded from education. To teach art as pure technique without allowing the children to go beyond what is "objectively there" would be to teach the letter but deny the spirit of a critical human endeavor. Even the sciences can gain from the incorporation of the imagination: what is understood much more clearly when one can compare it to what is not. Indeed, imaginatively going beyond received opinions concerning what is central to scientific progress. Certainly, providing children with an ability to think beyond what is to what should be is central to developing their

personal autonomy and to developing their ability to function responsibly in a democratic society in which such value choices must constantly be made.

Gardner's critique has even more extensive implications for curriculum development. If the school --as it often does -- places overwhelming emphasis upon teaching cognitively oriented subject matter "[t]he remaining intellectual capacities are, for the most part, consigned to after-school or recreational activities, if they are taken notice of at all." (p. 353) Moreover, this cognitive orientation isolates learning out from the context of a whole life, out of an overall struggle of the child to come to terms with the world and his or her place within it. The school may be effective in training children to occupy bureaucratic occupations that require cognitive skills but they may not be as effective in allowing the children to develop as whole human beings. Although Gardner ventures no explicit opinion beyond the statements that this emphasis "may leave an individual less able to rely on his own abilities" (p. 365) and that is "is not the only conceivable one and, quite possibly, not the optimal one," (p.365) his work contains an implicit critique of a method of education which circumscribes its efforts into a narrowly intellectual realm. Not only is such a system unfair to those whose "intelligences" lie outside the mathematico-logical and linguistic realms, but it also tends to limit the personal development and autonomy of all students. From the perspective of the educational philosophy presented at the beginning of this essay, Gardner's theory contains an implicit critique of much educational curricula.

Development and Curriculum

Gardner's expansion and modification of Piaget's general approach to child development is, as he admits, only in its initial stages of development. However, the evidence he does cite for his theory of multiple intelligences is strong and, moreover, is in line with my own observations of children. It is also, as we have seen, also in line with my idea of the goals of education. Therefore, it makes sense to look in more detail about how these ideas can be applied to curricula.

The first implication, which also follows from the theory of Piaget, is that learning should be activity oriented. That is, the child should not in most instances passively accept the knowledge but should be encouraged to actively seek things out. This is not to say that rote learning is inappropriate in all cases -- how else, for example, can one teach the irregular spelling of certain words? -- but in most instances the children should be encouraged to find patterns for themselves. Instead of simply presenting the rules for examining the regular spelling of words, for example, the teacher can present activities which allow the child to examine words and locate the patterns for themselves. By seeing that there are patterns, rather than simply applying rules, the learning process will be much more effective.

This active approach to learning relates strongly to the democratic cur-

riculum goals described above. Instead of being taught that knowledge and learning is something to be received from experts, the children are encouraged to look at the world for themselves, to explore it and make maximum sense out of it. Even where their explorations end up in absurd conclusions about the world, there will be benefits. As the children face concrete situations in the world they will be forced to give up those of their ideas that cannot be accommodated by experience; however, the encouragement of such reality testing of imaginative ideas will lead to a personality which questions received opinions, which is autonomous.

A second implication is that teaching methods should use as many sensory modes, as many 'intelligences' as possible. A mathematical problem might, for example, be primarily a logic-mathematical but it also might be approached spatially (by using models) or verbally (by translating it into a word problem). Such an approach will allow all areas of competence to develop and will particularly aid those students who may be deficient in one area or another.

This last point brings up an important benefit of such an educational approach: its ability to allow all students to maximize their potential. An important implication of Gardner's work is that all children do not have the same areas of potential: one child with strong logico-mathematical skills will do best at science while a child with below average mathematics capacities may have exceptional spatial, verbal or physical skills. By incorporating all intelligences in the curricula, all of these children can develop in accordance with their individual talents. In the cognitively-oriented schools only those students with the relatively narrow mathematical and verbal capacities which are emphasized will fully thrive. This, of course, is strongly in line with democratic values of equality of opportunity.

Gardner emphasizes that the various capacities are combined in symbolic cultural systems and, in fact, it could be argued that they become meaningful only when placed within such systems. The most formal mathematics, which may have no reference to anything outside of its own rules, only becomes a possible activity when a culture symbolically defines pure mathematics as a valued activity (by, for example, creating university departments which reward it with titles and money). In confronting and developing a sense of the world a child is not simply using the abstract frameworks of space, time, causality and so on; he or she is building upon these abstractions to form a symbolic model of the world. It is within this symbolic model, not in the objective model of physics, that the child will lead the life for which the educational system must prepare him.

This indicates that, where possible, curriculum subjects should be related to the symbolic world of the child. This will necessarily be different from the symbolic world of an adult of the culture and it therefore introduces again the Piagetian concept of readiness. One would have to be careful in talking about a terrorist event with third-graders; their view of the world is apt to be more involved with heroes and demons

than with complex political realities and the fears raised by the eruption of a demonic element into their world -- even through the mediation of television -- can make those even much worse than the generally more rational ones of adults (although many, if not most, adults have themselves not entirely rid their view of the world of demons).

A more positive implication of this is the importance of relating a specific lesson to the developing symbolic world of the children. That is, where possible, lessons should be presented within a context which can be related to their picture of the world. Examples and demonstrations which make analogies with that world can be effective in this area. It should also be noted here that different cultural groups have different symbolic worlds and thus may be more receptive to different presentations. The thing is to present information not as isolated facts but as part of meaningful bodies of knowledge that relate to the world as the children experience it.

This is not to say that all educational materials must be easily assimilated into those symbolic worlds. The purpose of education is to allow those worlds to be questioned, corrected and expanded; the real development that education can bring about comes from processes of accommodation -- of developing new pictures of the world -- not simply in confirming all pictures (assimilation). However, a too radical break with a previously defined symbolic picture will be so far from the student's world that he or she will neither accommodate it nor assimilate it. It will be introduced into the child's mind as a foreign substance and, as such, will be apt to remain isolated.

The points about curriculum made here have been primarily related to developmental implications of a theory which Gardner published in the 1980s. Yet the ideas are not new and related ideas have influenced educational practice at least since the time of Dewey. In the following passage, originally published seventy years ago, for example, one finds many of the same concerns which are implied by Gardner:

> When education under the influence of a scholastic conception of knowledge which ignores everything but scientifically formulated facts and truths, fails to recognize that primary or initial subject matter of an active doing, involving use of the body, and the handling of material, the subject matter of instruction is isolated from the needs and purposes of the learner, and so becomes just something to be memorized and reproduced on demand. (Dewey, 1966: 184)

In Dewey's classic treatment of democratic education we find the same emphasis on the rejection of a purely cognitive approach, on active learning and on placing learning in the context of the concrete life of the student. Thus, this developmental approach largely confirms what has been one of the most important (if very often not practiced) educational traditions of the present century, that of progressive education.

Bibliography

Berlak, A. & Berlak, H. (1981). *The dilemmas of schooling*. New York: Methuen.

Biber, *Our Changing Schools. Undated mimeo-graph.*

Biehler, R.F. & Snowman, J. (1971). *Psychology applied to teaching.* Boston: Houghton Mifflin Co.

Cohen, D.H. (1972). *The learning child.* New York: Vintage Books.

Dearden, R.F. (1968). *The philosophy of primary education.* London: Routledge, Kaan Paul.

Dewey , J. (1966). *Democracy and education.* New York: Macmillan / Collier.

Gardner, H. (1985). *Frames of mind.* New York: Basic Books.

Ginsburg, H.P. (1981). Piaget and Education. In Sigel, I.E., Brodznick, D.M. & Golmkoff, R.M. *New perspectives in Piagetan theory and practice.* Hillsdale, N.J.: Lawrence Erlbaum.

Lightfoot, S.L. (1978). *Worlds apart: relationships between families and schools.* New York: Basic Books.

Locke, J. (1959). *An Essay concerning human understanding.* New York: Dover.

Piaget, J. (1971). *Biology and knowledge.* Chicago: University of Chicago.

----------. (1964). Three Lectures. In R.E. Ripple & U.N. Rockcastle (eds.), *Piaget Rediscovered.* Ithaca: Cornell University Press.

Skinner, B.F. (1971). *Beyond freedom and dignity.* New York: Vintage.

------------. (1953). *Science and human behavior.* New York: MacMillan.

------------. (1948). *Walden II.* New York: Vintage.

Spodek, B. (1978). *Teaching in the early years.* Englewood Cliffs: Prentice Hall.

Sullivan, E. (1977). *Kohlberg's structuralism: a critical appraisal.* Toronto: Ontario Institute for Study of Education.

Wadsworth, B.J. (1971). *Piaget's theory of cognitive development.* David McKay Co.

Wieck, K. (1976). Educational organizations as loosely coupled systems. *Administrative Science Quarterly.* 21: 1-19. Education and Human Development