

The Child in the Primary Grades

John Isch

Child Development

Child development, particularly in young school-age children, nearly always provokes a discussion. Three fundamental issues usually surface in such a discussion: what are the major influences on the development of the child, at what rate does this development occur, and to what extent can and should schooling complement this development?

The first issue is the ancient nature versus nurture debate: Is the child a flower to be cultivated or a lump of clay to be molded? Does the child have within himself the propensities and abilities that determine what he will become? Is the caretaker's task to provide an environment which allows these natural abilities to become evident? Both a starry-eyed romantic like Froebel and the cold eye of a geneticist like Shockley look upon the child and answer "Yes" to this question.

Or is the child the empty page, ready to be filled with the writing of his environment? Is the caretaker's task to arrange the environment, to direct the process of development, to shape the child into what the caretaker believes to be in the best interests of the child and society? Both the federal government and B.F. Skinner look upon the child and reply "Yes" to this question.

The nature/nurture debate may be old but it is also as current as any discussion of Piaget or any of the contemporary skirmishes between Jerome Kagan and Arthur Jensen regarding mental ability.

Christian teachers and parents should leave this debate to the changing footnotes of history and find a third perspective of the child's development. In finding this perspective we will lift a page from secular developmental psychology and begin with C.H. Waddington's "landscape." Imagine a marble on top of a hill. Below the marble stretches a long valley. As the valley broadens we can see many smaller valleys branching off, some are low and flat, others are steep and narrow. No one can predict where the marble will eventually roll. At first, the marble follows the beginning of the valley, but as the valley broadens and divides, a slight breeze, an unpredictable bumping can direct the marble into an adjoining valley. With one change in the direction of the marble, new and alternate channels for the marble become possible. When the valleys are low, slight changes in the environment can cause the marble to change course; when the valleys are steep and narrow, even major disruptions in the environment may fail to change the marble's direction.

In Waddington's analogy, the valley with all its branches and potentialities represents the child's genetic inheritance, his genotype. The actual path the marble eventually takes is the child's phenotype, what the child becomes. Each person has his own valley and each path to the bottom is different. During the early stages of development, the progress of infants is quite similar: normal children learn to walk, socialize, and acquire language skills in roughly the same sequence and time. After infancy, however, minor or major environmental factors can alter the progress of the marble. Perhaps a minor factor, such as a good teacher, changes the course of development. At other times, when the valley is deep and narrow, even major events such as illness or parental divorce, will not change the direction of development.

The landscape metaphor is simple and useful. A perspective of God's creation and preservation can also be added to it. I have no difficulty in believing that God, when I was conceived, in His omniscience, love, and foreknowledge, gave me such a valley to transverse, a valley unlike anyone who lived before or since; the valley was uniquely mine. I do not know what side-valleys and unexplored channels there were in this genotype, nor am I particularly concerned. I am also comfortable with the belief that God, also in His omniscience, love, and foreknowledge, caused the breezes of culture and family or allowed the stones of misfortune, adversity, and sin to direct my development. The breezes, the storms, the earthquakes, and the valley itself are part of my creation and preservation. That is the necessary and sufficient answer to the Christian when he considers his own development or ponders the development of others.

Thus, God's gifts to humans is not just the gift of a genetic endowment, or just the gift of a particular environment. God is the giver of both. More significantly, God's gift is also the guidance of the interaction of the environment and our genetic characteristics which cause us to develop as we do. This view of development is not fatalism, nor is it the random workings of blind nature. Human development is according to God's plan. For the believer this plan works lovingly for his life and growing faith and this plan ends in the certainty of eternal life. For those who reject the Creator and Preserver, this plan ends in the finality of hopeless death.

What then is the potential of a genetically damaged Down's syndrome child? We cannot know. The valleys are narrow and deep, but the forces of love and faith and care can provide other valleys of development. What are the later effects of child abuse on a child's development? Again, we may speculate, but we cannot know with certainty. The child's intellectual capability, personality, and her understanding of God's love and guidance may keep her from a dark and terrible valley.

In our attempts to understand the development of the child, we should avoid the fatalism of nature alone and the randomness of nurture alone. We should show the child that what he is and what he is to become is and will be what God in His love desires that child to be.

The second major consideration in understanding the development of children relates to the variability in the rate of development and the interaction of this variability with environment. The first part of this equation is that for each human characteristic, there is usually a period of relatively rapid growth as well as periods of relatively slow growth. The second half of the equation says that a characteristic can be more dramatically affected by the environment in its most rapid period of growth than in a period of slow growth.

Take the following example: By age three boys have reached approximately half their adult height. It will take another fifteen years to grow the rest of the way. Obviously, growth as measured by height is an uneven process. An environmental effect, such as an inadequate diet, will have a greater impact on the child's growth before the age of three rather than after.

When Benjamin Bloom brought together the data to make this observation some 20 years ago, he had a considerable impact on early childhood education. Except for the pre-natal period, the most rapid development of major human characteristics occurs during the preschool years. The most notable exception is school learning itself. Any deprivation, social, intellectual, or emotional will have its most detrimental effects if this deprivation occurs between birth and five. There is less clear

evidence about the rate of growth in academic or school learning but some studies of brain growth (not growth in weight but growth in the formation of neural networks) suggests that rapid growth occurs during the primary grades of school, during early puberty, and during late puberty.

This principle of the interaction between the rate of development and environmental richness or deprivation is generally accepted. Compensatory programs such as Headstart found their theoretical basis in this principle.

This leads to the third issue in the development of young children. It is a more mundane topic, but it arouses even more passion and debate today than the nature/nurture debate. This issue is the extent that the environment, specifically the environment of schooling and directed learning, should match the developmental characteristics of the child. Should the school be "waiting" for the child to reach a certain place in his development and then provide the child with appropriate learning activities suitable to his level of development? Or should learning activities be planned which are beyond the present development of the child and thus stimulate him to advance in his development?

During the sixteenth century Western civilization discovered (or rediscovered) children; during the twentieth century it discovered adolescence. Since those two cultural discoveries, grandmothers, psychologists, admen, and most of the general populace recognized that children and adolescents are not smaller versions of adults. People may disagree on why children are different from adults, but they agree that the differences are more than quantitative. There are qualitative differences--in thought, in emotions, in socialization, in physical capabilities, and in every other significant area of human functioning. Thus was born the scientific study of children, from Charles Darwin's baby biography to Jean Piaget's monumental study of cognitive development. Gesell and Kohlberg, Havighurst and Hall, Freud and Erikson, Montessori and Bandura march in and out of psychology with their formulations and theories about the process of the child becoming an adult. And within these theories comes the question: are the stages of development a blueprint to be followed or are they opportunities to be stimulated?

Piaget called it the "American question," recognizing somewhat ruefully that Americans have a penchant for getting on with it, whether they are building a house or raising a child. Forms are to be returned before they are received, progress precedes planning, and if the economy doesn't grow, we are in a major recession. Most Americans thus view the process of child development as something that has to be prodded and stimulated, fearing if this is not done, the child will never grow up. Childhood becomes a time of life, the value of which lies in what the child is to become, not in what he is.

The issue of the stimulation of development would be resolved more easily if all children developed at the same rate (they don't), if the theories of child development were better than theories (they aren't), and if we had good evidence of the positive or negative effects of stimulated development (we don't). The arguments, therefore, of the proponents of early development are based on presumptions rather than evidence or sound theory. These arguments fall into two categories.

The first argument for the early stimulation and teaching of children contends that children will learn a skill, acquire a mental capacity, develop an attitude more thoroughly or with less effort if they are taught before they would typically develop the skill, capacity, or attitude. The idea is to learn something early because a delay in learning makes the learning harder. The logic of this argument is an

extrapolation of the optimal or critical periods of learning. There are, indeed, optimal periods of learning. Language acquisition is probably the most thoroughly researched area of optimum learning. Children who have been prevented from speaking until late childhood have a difficult time acquiring speech and may never acquire a normal facility and fluency. There are other areas of learning which also appear to have optimum periods, but the list is relatively small. (There is no evidence that reading is on that list.) For example, the Suzuki method of learning to play a musical instrument is based on the contention that music is an extension of language and should be learned at the same time and in the same natural manner as learning to talk. The theory sounds sensible, but it remains only a theory.

The second argument for stimulating the developmental process by introducing learning activities at an early age is that young children should not be denied the satisfaction and pleasure these skills provide. This line of reasoning is most often heard in connection with early reading experiences. Those who favor teaching children to read at an early age believe that to delay the teaching of reading denies young children the pleasures of reading. There is no evidence that early reading experiences develop better readers, but there is a belief that such experiences promote interest and enthusiasm for reading in young children. Back in the days when the New Math was having an impact on schools, one heard the same justification for teaching set theory to kindergarteners. Jerome Bruner was an enthusiastic promoter of this view, believing that young children can and should be confronted, in an intellectually honest way, with mature theories and concepts.

Thus the arguments for a structured and cognitive early childhood education are presented. Pre-schools and the academic kindergarten are needed because young children can master these tasks and because we should not deny them the pleasure of mature skills.

We should not be so naive to believe that all parents who enroll their children in a pre-school or who anticipate and encourage academic learning in kindergarten have clearly and carefully arrived at these insights into their child's development. Many parents are probably concerned simply that their child might fall behind other children if he is not enrolled in a pre-school or in an academic kindergarten. Whatever the reasons, the central question for parents and teachers is whether this intellectual stimulation is beneficial, neutral, or detrimental to the child's development.

There are writers, albeit a minority, who believe this early academic emphasis to be harmful to the development of the child. Raymond Moore and David Elkind come from two different perspectives and yet they reach the same conclusion: the acceleration of cognitive and social experiences results in frustration and withdrawal for many children who are intellectually and emotionally unable to deal with these experiences. These critics of the "hothouse" approach to child development do not advocate ignoring or neglecting the developing child. They believe that the child should be fostered in his development, stimulated to acquire new skills and learnings, and encouraged to exercise his maturing abilities. They want, however, these experiences to be in step with the child's development rather than ahead of that development.

Reversing a trend is unlikely to succeed, however, particularly when the trend such as early childhood education has such strong political, social, economic, and emotional investment. Preschools will continue to have a major impact on the education system of this country and will, in all likelihood, continue their growth in popularity in our Synod.

These three observations on early childhood development should provide a thoughtful background for teachers and for those who have the responsibility of helping teachers become more professionally competent. An understanding of God's providence in creating the nature and providing the nurture for the child's development helps Christian teachers understand both the potentials of the child and the necessity of guidance in the child's development. The interaction of the rate of development and the effects of environment emphasize the importance of the early years of development. The American question of fostering early intellectual development, whatever personal beliefs we may have on this issue, should cause us to examine critically the learning experiences which are provided young children.

Teaching and Observing in the Primary Grade Classroom

The Classroom Setting

Primary grade classrooms, particularly kindergarten rooms, should appear different from middle and upper grade rooms. Perhaps because these grades are the beginnings of many different kinds of learning, the classrooms display these beginnings: alphabets, numbers, colors, drawings, songs, and charts. Perhaps because these children need reminders of what they are learning more than other children, these reminders cover the walls and chalkboards. Perhaps because these children need the visual and the concrete, there is much visual and concrete. For these and other reasons--a need for structure, for movement, for individual activity--an observer of classrooms has little difficulty in recognizing that he is in a primary grade classroom

If the observer visits primary grade classrooms infrequently, he may be somewhat intimidated. He is intimidated, first, because his own classroom probably seems drab and sterile in comparison. Second, the variety and abundance almost boggles the mind: boxes for homework, vocabulary mobiles, acres of laminated pictures and charts, book reports rising ever higher above art pictures, Bible story pictures crowding against phonics charts, crayons and paste and paper rollicking together with beads and ribbons. The sight of a primary grade classroom in all its abundance can sober an eighth grade principal in ten seconds flat.

But that is the point where observation should begin: form cannot be a substitute for substance. What decorates the room should also contribute to the learning and life of the children in the classroom. Does the teacher use the material, does she point it out to the children, does she change, remove, and add to what she has in the classroom? Is it all there to be seen, or is it there to be used?

Having overcome the culture shock of entering a primary grade room and beginning his critical examination of the room, the observer should also turn his attention to the specific materials for teaching. There should be books, but not the preponderance of textbooks found in the middle and upper grades. Social studies and science, for example, generally do not need textbooks in the primary grades. Words and pictures in textbooks are frequently inadequate to convey to children of this age information about the world about them. Science and social studies are best learned during these years through experiences and observation.

Because seatwork, generally using workbooks and worksheets, occupies such a considerable amount of class time (up to 70%) in the primary grades, it merits study

by those who teach in and by those who supervise primary grade classrooms. First, there are good and bad workbooks and worksheets just as there are good and bad assignments in the middle and upper grades. Second, there are experienced and inexperienced teachers in the primary grades just as there are such teachers in the middle and upper grades. Third, there are varying ways in which teachers teach, assign, correct, and motivate for the assignments they give.

The bad workbooks and worksheets are those which are too difficult or confusing for children, which are unattractive and insipid, which have little or no relationship to the lesson taught, and which provide the wrong kind of practice for the lesson. The good workbooks and worksheets provide appropriate practice and reinforcement and are interesting and attractive. The value of the workbook can be judged by studying the lesson for which the workbook page was designed, by examining the worksheet itself, and by watching the children as they complete the assignment.

Beginning teachers are probably more dependent on workbooks and commercial worksheets than are experienced teachers. Teachers need several years, numerous workshops and teachers' conferences, formal coursework, and many discussions and sharings with other teachers before they accumulate those filing cabinets filled with assignments and teaching aids.

Experience will also help the teacher understand how best to use workbooks and worksheets. She generally learns, too often by painful experience, that assignments come after the lesson has been taught, not before; that if many workbooks and worksheets are used, many must be corrected; that children become bored and careless when assignments are given mechanically; and that a live, interacting lesson, not a workbook page, is the heart of teaching. Those whose task is to help teachers grow professionally should also realize that teachers need more than raw experience for their professional development. Graduates of DMLC are not inexperienced experts who need only experience to become capable teachers; they are rather well-prepared beginning teachers who need assistance in understanding and making sense out of their daily classroom experiences. This professional growth should be encouraged through a healthy balance of formal, inservice courses and workshops as well as the more informal faculty room discussions.

In the past ten years new technologies for making and reproducing classroom teaching materials have changed the amount and kind of worksheets available to teachers. On the one hand, the sheer number of worksheets is now virtually limitless. On the other hand, worksheets can be produced in greater variety for the needs of individual learners, worksheets can be revised and tailored to classroom situations more easily, and worksheets can be produced more quickly as the teacher needs them. Those who supervise instruction in our schools should assist teachers to use workbooks and worksheets in the way they are intended to be used. If, however, the learning activities and the materials are centered around workbooks or worksheets, the observer should have a valid question whether the classroom time is being used effectively and whether the teaching is appropriate for the children.

In addition to the amount of time spent on seatwork, research and practice provides some guidelines for assigning, monitoring, and evaluating seatwork.

Teachers typically provide procedural explanations of how to complete the seatwork. They should also give the purpose of the seatwork and a description of the cognitive strategy to be used to do the assignment. Providing a description of the strategy is particularly important when the skill is new or difficult. These reminders of strategy can take the form of teachers' modeling through think-aloud

techniques with one or two examples from the assignment.

In a single-grade classroom the teacher should not start a new group lesson immediately after a seatwork assignment has been given. Instead, she should spend five minutes circulating among students, especially noting the performance of the lower achievers or anyone else who has had difficulty on similar tasks. In a multigrade classroom the teacher should also take a few minutes to circulate among students at their seats before she begins the next class. When circulating among students during these brief troubleshooting rounds, the teacher occasionally (but regularly) should ask students to explain how they got certain answers, whether correct or incorrect. This provides the teacher with more information than just the answer on the paper, and may also force students to become more reflective of the process being taught. The teacher should establish clear systems through which students can get help while they are busy teaching others. Teachers can use a buddy system after teaching students that helping someone does not mean giving the answer. Teachers can also have a system whereby children with a problem can let them know that they want help when the teacher can leave the group.

In evaluating seatwork, teachers can provide cursory feedback in some situations, when students can recognize what was wrong and know what to do to correct errors. Similarly, an emphasis on effort, persistence, and independence is also appropriate when students are able to control their efforts and succeed through them. However, the poor student with a difficult assignment cannot do better simply by trying harder. Such a student, when the emphasis is on persisting and finishing the assignment, will use strategies such as asking other students for the answer or blind guessing. Students who are experiencing difficulties generally do not get adequate feedback on their performance and the teacher is not getting information from them about their thinking processes that led to their errors.

Seatwork is an important component of the primary grade classroom. It lays the foundation for much of what is learned in school. Equally important, seatwork provides the first information the young child has regarding his capabilities and limitations in doing school work. Thus both motivation and learning begin with those worksheets and workbook pages. They are more than time-fillers in the primary grade classroom.

The Teacher

The teacher in the primary grades of our Synod's schools is, with few exceptions, a woman. The exceptions are the 24 one-room schools taught by men (1985). The primary grades in a one-room school present a different situation than what is found in other schools. Thus the analysis of the primary grade teacher which follows is directed at women teachers.

The audience of this essay is male. Men teachers, who predominantly teach in the middle and upper grades, generally see primary grade teachers as different. Kindergarten teachers in particular are perceived as different. A fourth grade teacher is pretty much the same as an eighth grade teacher, but a kindergarten or a first grade teacher is not the same as a fifth grade teacher.

The converse of this perception of middle and upper grade teachers toward primary grade teachers also exists: primary grade teachers frequently see themselves as different and may grow to believe they are operating a school separate from the rest of the grades. Because they teach "simple" things to young children, they may come to believe that their professional development needs to be more non-theoretical,

unintellectual, and practical than the professional development of other teachers. Books, courses, and intellectual things become the exclusive province of the upper grade teachers, and laminating, teaching devices, and workshops become the professional development for primary grade teachers. Whether this mis-perception of primary grade teachers is a form of intellectual self-putdown or whether it is a practical-minded snobbishness depends on where you sit. Certainly the work of the primary grade teacher in laying the foundations for reading, writing, and mathematics is not trivial, anti-intellectual, or untheoretical. One could argue, in fact, that their teaching touches more closely the great theories of teaching, learning, and knowledge than does any other level of schooling, including the esoteric atmosphere of the graduate school.

Why primary grade teachers and middle and upper grade teachers see themselves and others as different is difficult to understand and analyze. Nevertheless, we shall speculate.

There may be a greater turnover in teachers in the primary grades; thus the perception of difference may be age-related rather than grade-related. The difference may simply be the ancient difficulty that men and women have in understanding the psyche of the other gender. In the case of half-day kindergarten teachers, this difference may lie in their "part-time" status. In some cases the difference may be the stereotype held by a few that the primary grades are unimportant and "lower" and thus can be left in the hands of the less competent. Perhaps the difference may arise because there is little or no peer supervision, in the sense of women helping other women develop as professional primary grade teachers. And, the difference could result because primary grade teachers in the Synod see themselves as less professionally qualified, less intellectual, or less theologically competent than middle and upper grade male teachers.

Whatever the cause of these differences; to what extent these differences arise from our cultural baggage, the teacher-training program of the Synod, or the Scriptural directives regarding the proper relationship of men and women; or to what extent these differences even exist in our minds, these differences can affect the work of improving instruction in the primary grades. The old have a tendency to be condescending toward the young, men can have the same attitude toward women, and upper grade teachers toward lower-grade teachers. The young have the tendency to scorn the old as outdated and rigid, women may tend to see men as insensitive and crude, and lower-grade teachers can deride upper-grade teachers as rough and unfeeling toward children. When human beings bring these stereotypes and prejudices into a conference, communication breaks down. All of us, men/women, young/old, primary/intermediate/upper grade teachers need to see each other as professionally competent, called ministers, with unique but complementary gifts and abilities.

The Children

Characterizing five-, six-, and seven-year-olds is about as accurate as describing flowers as round and colorful. Five-year-olds are settled and self-contained, six-year-olds are indecisive and volatile, and seven-year-olds are calm and self-absorbed. Having said that, you probably haven't said much more than that flowers are round and colorful. Generalizations don't describe Peter and they hardly do justice to Rachel. But in the absence of Peter and Rachel, generalizations will have to do. With that caveat the following attempts some generalizations concerning the development of primary grade children. The first section is taken from Gladys Jenkins and Helen Schacter, These Are Your Children, pp. 119-164.

Five-year-olds

The five-year-old has entered a period of slower physical growth, very different from the rapid growth of the first eighteen months. The five-year-old may be expected to grow two or three inches during the year and to gain from three to six pounds. This physical growth is uneven. Legs are lengthening more rapidly than other parts of the body, lungs are still relatively small, and the heart is growing rapidly. Their large muscles are still much further developed than the small muscles controlling the use of the fingers. Bone development continues and during this process of ossification, posture and proper school furniture are important. The stomach is half the adult size; because of this and because the stomach is straighter and more upright, it empties faster in both directions.

A child's handedness usually is determined by five but the five-year-old's hand and eye are not yet completely coordinated. Kindergarten children may have difficulty when they try to reach for things beyond arm's length and may sometimes spill or knock them over. They normally are far-sighted. A child's taste may be more acute than an adult's (the milk may indeed be sour).

By five, the brain has achieved 90% of its adult weight. New brain cells are still being added and the complexity of the neural interconnections continues to increase. The brain will retain its flexibility for several years yet so that in the event of brain injury, other areas of the brain can still take on the functions of the damaged portion.

Five-year-olds are better able to use and control their bodies purposefully and often skillfully. Individual differences are becoming quite obvious and these differences will increase during the next few years. Five-year-olds get tired easily in spite of their vigor and their eagerness to use their bodies. In a kindergarten program one or more rest periods are advisable.

Children of this age usually have an idea of what they want to do before they go to work. In painting they may begin by announcing what they are going to paint. Often they will be very critical of their own work, expressing dissatisfaction with it or asking for directions. An increase in perceptual acuity shows in their drawings and paintings. Details such as windows, flowers, a door into a house, eyes, hair, and fingers, or people with contrasting size, indicate the growing ability to observe details.

Five-year-olds are learning how to control their own impulses and how to get along together. Attitudes toward the acceptance or rejection of others who are different from themselves are being formed. Prejudice toward other races or cultures is acquired during these years.

Children of this age enjoy rhythms, songs and dramatic play. They are greatly interested in group activities and group play. They like to play with other children, but they are not very good about really cooperating with others. They stay in the group as long as they enjoy it, but their interests are self-centered. If they tire of group activities, they become restless or seek something else that pleases them more. The kindergarten child is capable of taking part in large group activities if they are well supervised, but they get along better in small groups of five or six children, or with just one other child.

Five-year-olds are beginning to use language fluently and correctly. They usually pronounce words clearly and are easily understood, They talk freely, carrying on conversations and expressing ideas.

Children of kindergarten age are quite independent and enjoy doing things for themselves--if they previously have not been pushed too hard or had too many discouraging demands made on them. Five-year-olds show their independence by liking to be trusted with errands or by performing simple tasks at home and in kindergarten. This is the age when children are beginning to be able to take some responsibility for their own actions. Many of them have learned to cross a street safely on their way to school. Most five-year-olds like to fit into their environment and infrequently rebel against it.

Five-year-olds are better able to settle into the necessary routines of the larger group than they were at four. Five seems to be almost a resting point between the out-of-boundness of many four-year-olds and the confusion of some six-year-olds as they are confronted with the many new experiences of moving into the larger world of first grade.

Six-year-olds

Six is one of the turning points in the lives of children because here they step beyond the family circle into the larger world of the school and the community. Now that they are six, children must find their own places and make their own friends under new conditions. At home children are loved and accepted because they are members of the family group; but when they start first grade and are away from home much of the day, they learn--as they began to learn in kindergarten and even earlier--that among their peers they must earn acceptance.

Progress in physical development varies among different children, but by six children have lost most of their baby contours, Although their growth at this age is less rapid than during earlier periods, their legs are continuing to lengthen and they are gaining in both height and weight. The child's body type is also evident at six: the broad, solidly built boy or girl can be expected to weigh more in proportion to height than the slim, rangy youngster, and yet neither is underweight or overweight.

The heart is still in a period of rapid growth, but the brain has almost achieved its full weight. During this year, the child's eyes are still not mature in either size or shape, and their relatively shallow depth probably accounts for a continuing tendency toward far-sightedness. The ability to distinguish accurately between a "b" and a "d" may not come until age seven. Although eye and hand preferences are well established, a six-year-old still has difficulty in coordinating eye and hand movements. Muscular development also is uneven, the large muscles being more advanced in general than the small ones.

At this age children rush about in their play, jump up from the table at mealtimes, and wriggle in their seats at school. Their whole bodies seem to be involved in everything they do. When they read, they move their lips, shuffle their feet, and twist their fingers in their hair. When they write, they screw up their faces, bite their lips, and pull themselves back and forth in their chairs, They may try hard to sit still, but they are unable to do so for long, because they have trouble controlling their movements voluntarily. The inability of many six-year-olds to sit still for more than a short time is a byproduct of the rapid growth of their large muscles, their high energy drive, the fatigue that follows the too concentrated use of the small muscles, sometimes the strain of using the eyes before they are fully

ready for close work, and the difficulty of controlling and inhibiting movement. Six-year-olds carry over this pattern of activity even in their thinking. They learn better by participating actively than by sitting and listening.

Children of six are trying to free themselves of the behavior of little children. They do not want to be treated as they were during their preschool years. Group activities gain popularity in the first grade, although few children evidence group loyalty or responsibility. At six children often enter a game enthusiastically only to leave if they do not get the parts they want, or if they lose, or if something else attracts their attention. Such typical behavior shows that this still is a transition period between the individualistic play of the preschool child and the team play of the middle-grade boy or girls. Best friends are almost always of the same sex, and play in small groups is preferred. Although friendships are still shifting, they tend to last longer among the more mature children.

To most six-year-olds, the distant past, even if vividly presented by television, still remains vague and only slightly understood. Time, like distance, is not a clear concept for them; they are interested in the present, in what is happening now. They often have trouble understanding the family album: father could not have been a child. Six-year-olds cannot plan much for the future nor carry out responsibilities well which involve a perception of time.

Six-year-olds, however, can be responsible. Because they want to identify with adults and do what they think is grown up, they imitate the mannerisms and actions of their mother, father, or a teacher. They often have a hard time making decisions, and they should not be expected to make too many. Routines eliminate the need for some choices and give six-year-olds a feeling of security. Children of this age are reassured to know that meals come at certain times and that one activity follows another in regular order in the schoolroom.

Primarily, six is an age of transition. These children are not more integrated, better-adjusted five-year-olds. They are different children, actually less stable, less decisive, and often less cooperative. They are being faced with many new experiences with which they must learn to cope. They are changing physically, mentally, emotionally, and socially. They are trying to identify with older children and even with adults. They want to be grown up, but at the same time they are small and dependent on the affection of the adults about them.

Seven-year-olds

Seven-year-olds are much like six-year-olds in their physical growth, but in their feelings, in their attitudes, and their capacities to begin thinking logically they have entered another phase of their development.

Children are gradually becoming more skillful in using their small muscles and in coordinating their hands with their eyes. Consequently, their writing is improving, although many still grasp a pencil tightly and show considerable tension when forming letters. Their eyes are not fully ready for close work, and they often may rub their eyes. They tire easily and often show fatigue during the afternoon session of school. On the whole, even though seven-year-olds attempt more kinds of activities, they are more cautious and less likely to take chances than when they were six.

Language develops rapidly from six to seven. Seven-year-olds carry on vivid conversations. They like to talk although their conversations usually center around

themselves and the things they have done or around their families and their possessions. They tend to dress up a story and usually tell it eagerly, often with accompanying gestures. They still enjoy dramatic play, both in school and in spontaneous play with other children. Children now can use language effectively in expressing disapproval. Instead of fighting, seven-year-olds sometimes hurl words at their antagonists and walk off the scene. They express their feelings toward their parents and their requests in no uncertain terms if they think parents are unfair or if they do not want to comply.

Their interests in stories have increased, as have their attention spans; they can listen or read for a longer period of time and can carry the thread of a story from day to day.

Seven-year-olds are learning to stand up for their own rights on the playground and will sometimes stand up for the rights of another child, especially where property is concerned. Most seven-year-olds will fight for their rights if necessary, or else will walk off defiantly and refuse to play.

Seven-year-olds are sensitive to what other children think about them and to whether or not they are liked. At the same time, they also are reaching for praise from adults and are becoming increasingly sensitive to adult approval or disapproval. They want to grow up, to leave behind the manners and dress and behavior of little children, and to assume the standards of peers or of children a year or two older; yet they do not quite trust themselves and often seem anxious for fear they will do things incorrectly. If there is too much adult control, they will rebel against it, yet they continually turn to adults to make sure they are right.

Seven is a good year for schoolwork because children are anxious to do well and to learn how things are done. It has been called the "eraser age" because many seven-year-olds erase as much as they write, trying constantly to make their work more nearly perfect.

Seven-year-olds have learned to do many things for themselves--even though they often dawdle and dream while they are doing them. Although sevens are beginning to understand what time is and how to tell time, they still live primarily in the immediate present and cannot plan realistically for future goals.

One of the most striking contrasts between six and seven is that whereas six-year-olds are content with whatever happens to be going on--being taken to the park or riding their bikes--seven-year-olds reach out for new experiences, trying to relate themselves to their enlarged world. They are often dreamy and absorbed, seeming to take things into themselves. They like other people and want to be with them; they are gradually becoming more sensitive in their feelings toward them and more aware of others' feelings. Seven is a responsive age.

Cognitive Development

The primary grade child is typically in the later portion of Piaget's pre-operational thought stage, sometimes called the stage of intuitive thought. The characteristic of this stage is that the child becomes capable of manipulating symbols that represent his environment rather than being relatively restricted to the direct interaction with the environment.

The influence of language acquisition on this development is a point of debate among the Piagetians and the linguists. Piaget felt that language was not the key influence on this change in the way a child thinks; those with more of an investment in language and language acquisition believe that when a child grows in his mastery of the language, that language serves as the symbols through which a new way of thinking occurs. Whatever this relationship between language and thought, these primary grade years constitute some significant changes in the ways in which children think.

During these years the child acquires the ability to reverse an operation, to think his way from one condition to another, and return to the starting point. This reversibility is shown in the well-known experiments with clay balls which are rolled into a sausage shape, liquid or beads poured into containers of different sizes, or logic experiments such as, "Do you have a brother? Does your brother have a brother?"

A second change in thinking during these years is the gradual acquisition of the ability to take the view of another. This change shows itself in situations which call upon the child to recognize or draw the position of objects from the view of someone else or in understanding the thoughts and feelings of others. This movement away from egocentric thought also shows itself in the child's growing understanding of language as a means of communicating with others rather than a form of egocentric thought. This latter change is well illustrated in a simple experiment in which children are to repeat an explanation or a story. A pre-operational thought child tends to repeat explanations or stories with an incorrect order of events, with little or no causal explanation, and often incoherent and unintegrated. Following is one child's account of how a water faucet works: "The handle is turned on and then the water runs, the little pipe is open and the water runs. There, there is no water running, there the handle is turned off, and then there is no water running, and here the water is running. There, there is no water running, and here there is water running." As the child progresses through the primary school years, he becomes more aware of the views of others and he adapts his speech accordingly; he realizes more that speech has a communication function and has to be directed at an audience and tailored to that audience.

Adult reasoning is from the general to the specific (deductive) or from the specific to the general (inductive). Pre-operational thought children base their actions on a simple memory from a previous experience, or their own desires distort their reasoning, or they use a different kind of reasoning called transductive reasoning, from the specific to the specific. "Basements are cold and damp because spiders live in them." To a child there is no difference between the statements: "A cool room causes a person to put on a sweater." and "A person putting on a sweater causes the room to be cool." The inability to see a cause and effect relationship and the tendency to reason from a specific to a specific results in a charming form of reasoning called transductive reasoning.

Another example of this kind of reasoning is found in an experiment Piaget performed with eight-year old children. In an explanation of the proverb, "When the cat's away, the mice can play," one boy said the proverb means, "Some people get very excited but never do anything." By way of explanation the boy said, "Because the words are about the same. It means that some people get very excited, but afterwards they do nothing, they are too tired. There are some people who get excited. It's like when cats run after hens or chicks. They come and rest in the shade and go to sleep. There are lots of people who run about a great deal, who get too excited. Then afterwards they are worn out and go to bed."

Children in the primary grades also have difficulty with class inclusion,

forming hierarchies or groups of categories for various ideas or objects. When shown two groups of flowers, some of which are red and some blue, the child may have difficulty recognizing that there are more flowers than blue flowers, that blue flowers are a subset of the set of flowers. The child may understand he lives in Minneapolis, but he doesn't believe he lives in Minnesota because he can't live in two places at once. Or, "Are you Lutheran? No, I'm a boy." The child fails to understand the idea of inclusivity, that one class can be contained within a larger group of things. In a similar manner, the child may believe that if two things share one particular characteristic, they share all characteristics. If two boys are sick, then they share the same sickness and they get well at the same time.

These changes from pre-operational thought to symbolic or concrete operational thought are major changes in the cognitive development of the child. These changes set the stage for the content learning of the elementary school years and provide the basis for the future development of logic and abstract reasoning. Those who work with young children should be aware of some aspects of these changes.

First, the changes in any particular child are gradual and the child may at times move back and forth between different ways of thinking. Difficult or confusing situations can cause a seven-year-old to revert to a five-year-old's way of thinking. The changes come about gradually and naturally as the child's experiences and his world broadens.

The progress of cognitive development also varies considerably among children, among cultures, and among societies. Ages which are frequently given for the stages are only approximations.

Finally, pre-operational thought is not a defect. An adult with pre-operational thought may have difficulty in coping with the world, but the young child does quite well. He, at least, is spared the chemical and biological explanation of why grass is green because he is comfortable with the explanation that it is green so that grass can be pretty for him. "Night comes to put me to sleep" also has a charm to it that the involved mechanics of astronomy do not. The passing of pre-operational thought ought to be regarded as the inevitable demise of one of the more charming aspects of childhood.

Contemporary Changes in Development

The descriptions of children which are given above have been organized by the age of the child. A word should be said about this growth gradient approach to the study of children. Some forty years ago, Arnold Gesell, one of the great child development psychologists of this century, wrote two popular books in which he described children according to certain age-specific characteristics. Today, a reader of Gesell's books has a sense of nostalgia: the pages seem right out of "Leave it to Beaver." Children of 1986 are not the same as the children of 1946 nor are they the same as the children of 1976, nor will the children of 1996 be the same as children today. The "secular trend," the tendency of each generation to reach puberty at an earlier age than the previous generation, has reduced the average age for the onset of puberty by two years during this century. During the past 30 years, however, this biological end to childhood has not changed.

Social and cultural forces continue to affect childhood, however. The characteristics Gesell used to describe seven-year-olds bear hardly any resemblance to today's seven-year-olds. The characteristics for the seven-year-olds given above may

may be more typical of some six-year-olds.

Among the various kinds of development the one which appears to be occurring earlier is social development. There may also be changes in physical and mental development, but these are more closely tied to biological growth which is less influenced by culture. Emotional development is affected by the other processes and, in any case, is difficult to measure. Thus we are most likely to miss our guess on the age of a young child if we examine his social development. The child's acquisition of social norms, his ways of relating to adults and other children, his speech, his knowledge of social conventions, his ability to work in groups can be traced to a number of trends in society. These would include the broadening world of television and family mobility, the decline of the classic family pattern of a working father and a homemaking mother, the desire of adults to give children greater responsibilities, and others.

Theoretically, there should be a floor below which accelerated development cannot go. As development reaches down to this theoretical limit, there is likely to be an increase in tension within the child and within society itself. As the child finds himself unable to maintain the equilibrium of his social, physical, emotional, and mental development, he may cease being a child and become neither child nor adult. Piaget and other developmental psychologists have helped us see childhood as a time in the life span which is unlike any other time. But history also teaches us that childhood or a particular view of childhood is a social invention. We have in the past thirty years redefined what we mean by the elderly. We may also be on the threshold of a new kind of childhood. We can only hope that it will be as fascinating as the one which appears to be passing.