Class 8

Vygotsky

Developmentally Appropriate Practice

Articles:

Lev Vygotsky 1896-1934

Lev Vygotsky

Developmentally Appropriate Practice

Developmentally Appropriate Academics: From Infants Through Kindergarten

Discussion Questions:

Who was Lev Vygotsky?

What is the More Knowledgeable Other (MKO)?

What is the Zone of Proximal Development (ZPD)?

What are the three stages of speech development according to Vygotsky?

What is inclusion?

What is Developmentally Appropriate Practice (DAP)?

Lev Vygotsky

1896 - 1934

Russian psychologist

Originally a teacher and literary scholar

Wrote Thought and Language (1962) and Mind in Society (1978), (both published posthumously in the West) which had a major influence on Soviet and Western psychology, especially regarding child development.

Theory

Social interaction plays a fundamental role in the development of cognition. Vygotsky believed everything is learned on two levels. First, through interaction with others, and then integrated into the individual's mental structure.

A more experienced partner (whether peer or teacher) is able to provide "scaffolding" of the subject matter to support the student's evolving understanding.

Another aspect of Vygotsky's theory is the idea that the potential for cognitive development is limited to a "zone of proximal development". This "zone" is the area of exploration for which the student is cognitively prepared, but requires help and social interaction to fully develop.

Implications for Instruction

Students need socially rich environments in which to explore subjects with teachers and peers. Opportunities to work with more experienced peers are especially important to help the student develop a higher level of cognitive functioning. Support for learning can also come from instructional practices such as graphic organizers, guided practice, etc.

Three Stages of Speech Development

1st stage- Social speech (or external speech)

"In no way is this speech related to intellect or thinking." (Luria, 1992) In this stage a child uses speech to control the behavior of others. A child uses speech to express simple thoughts and emotions such as crying, laughter and shouting.
An example of speech in this stage is "I want milk."

2nd stage- Egocentric Speech

This is typically the type of speech found in a three to seven year old. "It serves as a bridge between the primitive and highly public social speech of the first stage and the more sophisticated and highly private inner speech of the third stage." (Lefrancois, 1994) In this stage, children often talk to themselves, regardless of someone listening to them. They things out loud in an attempt to guide their own behavior. They may speak about what they are doing as they do it. They reason that language must be spoken if it is to direct their behavior.
Ex. A child in school who counts out loud one block at a time saying each number as he/she goes along to get five.

3rd stage- Inner Speech

This is the final stage of speech development. It is inner, soundless speech. This is the type of speech used by older children and adults. This type of speech allows us to direct our thinking and behavior. Once one has reached this final stage they are able to engage in all forms of higher mental functions. In this stage one is able to "count in one's head, use logical memory- inherent relationships, and inner signs." (Hanfmann, 1962) .

Applications of Vygotsky's Theory to Education

The most important application of Vygotsky's theory to education is in his concept of a zone of proximal development. This concept is important because teachers can use it as a guide to a child's development. It allows a teacher to know what a student is able to achieve through the use of a mediator and thus enables the teacher to help the child attain that level by themselves.

A second important aspect of Vygotsky's theory is the role of play in his theory. According to this perspective teachers need to provide children, especially young children, many opportunities to play. Through play, and imagination a child's conceptual abilities are stretched. Vygotsky argued that play leads to development. "While imitating their elders in culturally patterned activities, children generate opportunities for intellectual development. Initially, their games are recollections and reenactments of real situations; but through the dynamics of their imagination and recognition of implicit rules governing the activities they have reproduced in their games, children achieve an elementary mastery of abstract thought." (Cole, 1978).

Since language holds a central role in Vygotsky's theory, and is essential to the development of thinking, the school needs to provide many opportunities that allow children to reach the third stage of speech, which is inner speech, since it is this stage which is responsible for all higher levels of functioning.

Lev Vygotsky

simplypsychology.org/vygotsky.html

SimplyPsychology

by Saul McLeod, updated 2018

The work of Lev Vygotsky (1934) has become the foundation of much research and theory in cognitive development over the past several decades, particularly of what has become known as Social Development Theory.

Vygotsky's theories stress the fundamental role of social interaction in the development of cognition (Vygotsky, 1978), as he believed strongly that community plays a central role in the process of "making meaning."

Unlike Piaget's notion that childrens' development must necessarily precede their learning, Vygotsky argued, "learning is a necessary and universal aspect of the process of developing culturally organized, specifically human psychological function" (1978, p. 90). In other words, social learning tends to precede (i.e., come before) development.

Vygotsky has developed a sociocultural approach to cognitive development. He developed his theories at around the same time as Jean Piaget was starting to develop his ideas (1920's and 30's), but he died at the age of 38, and so his theories are incomplete - although some of his writings are still being translated from Russian.

No single principle (such as Piaget's equilibration) can account for development. Individual development cannot be understood without reference to the social and cultural context within which it is embedded. Higher mental processes in the individual have their origin in social processes.

Vygotsky's theory differs from that of Piaget in a number of important ways:

1: Vygotsky places more emphasis on culture affecting cognitive development.

This contradicts Piaget's view of universal stages and content of development (Vygotsky does not refer to stages in the way that Piaget does).

Hence Vygotsky assumes cognitive development varies across cultures, whereas Piaget states cognitive development is mostly universal across cultures.

2: Vygotsky places considerably more emphasis on social factors contributing to cognitive development.

(i) Vygotsky states cognitive development stems from social interactions from guided learning within the zone of proximal development as children and their partner's co-construct knowledge. In contrast, Piaget maintains that cognitive development stems largely from independent explorations in which children construct knowledge of their own.

(ii) For Vygotsky, the environment in which children grow up will influence how they think and what they think about.

3: Vygotsky places more (and different) emphasis on the role of language in cognitive development.

According to Piaget, language depends on thought for its development (i.e., thought comes before language). For Vygotsky, thought and language are initially separate systems from the beginning of life, merging at around three years of age, producing verbal thought (inner speech).

For Vygotsky, cognitive development results from an internalization of language.

4: According to Vygotsky adults are an important source of cognitive development.

Adults transmit their culture's tools of intellectual adaptation that children internalize. In contrast, Piaget emphasizes the importance of peers as peer interaction promotes social perspective taking.

Effects of Culture: - Tools of intellectual adaptation

Like Piaget, Vygotsky claimed that infants are born with the basic materials/abilities for intellectual development - Piaget focuses on motor reflexes and sensory abilities.

Lev Vygotsky refers to 'elementary mental functions' –

- Attention
- Sensation
- Perception
- Memory

Eventually, through interaction within the sociocultural environment, these are developed into more sophisticated and effective mental processes/strategies which he refers to as 'higher mental functions.'

For example, memory in young children this is limited by biological factors. However, culture determines the type of memory strategy we develop. E.g., in our culture, we learn note-taking to aid memory, but in pre-literate societies, other strategies must be developed, such as tying knots in a string to remember, or carrying pebbles, or repetition of the names of ancestors until large numbers can be repeated.

Vygotsky refers to tools of intellectual adaptation - these allow children to use the basic mental functions more effectively/adaptively, and these are culturally determined (e.g., memory mnemonics, mind maps).

Vygotsky, therefore, sees cognitive functions, even those carried out alone, as affected by the beliefs, values, and tools of intellectual adaptation of the culture in which a person develops and therefore socio-culturally determined. The tools of intellectual adaptation, therefore, vary from culture to culture - as in the memory example.

Social Influences on Cognitive Development

Like Piaget, Vygotsky believes that young children are curious and actively involved in their own learning and the discovery and development of new understandings/schema. However, Vygotsky placed more emphasis on social contributions to the process of development, whereas Piaget emphasized self-initiated discovery.

According to Vygotsky (1978), much important learning by the child occurs through social interaction with a skillful tutor. The tutor may model behaviors and/or provide verbal instructions for the child. Vygotsky refers to this as cooperative or collaborative dialogue. The child seeks to understand the actions or instructions provided by the tutor (often the parent or teacher) then internalizes the information, using it to guide or regulate their own performance.

Shaffer (1996) gives the example of a young girl who is given her first jigsaw. Alone, she performs poorly in attempting to solve the puzzle. The father then sits with her and describes or demonstrates some basic strategies, such as finding all the corner/edge pieces and provides a couple of pieces for the child to put together herself and offers encouragement when she does so.

As the child becomes more competent, the father allows the child to work more independently. According to Vygotsky, this type of social interaction involving cooperative or collaborative dialogue promotes cognitive development.

In order to gain an understanding of Vygotsky's theories on cognitive development, one must understand two of the main principles of Vygotsky's work: the More Knowledgeable Other (MKO) and the Zone of Proximal Development (ZPD).

More Knowledgeable Other

The more knowledgeable other (MKO) is somewhat self-explanatory; it refers to someone who has a better understanding or a higher ability level than the learner, with respect to a particular task, process, or concept.

Although the implication is that the MKO is a teacher or an older adult, this is not necessarily the case. Many times, a child's peers or an adult's children may be the individuals with more knowledge or experience.

For example, who is more likely to know more about the newest teenage music groups, how to win at the most recent PlayStation game, or how to correctly perform the newest dance craze - a child or their parents?

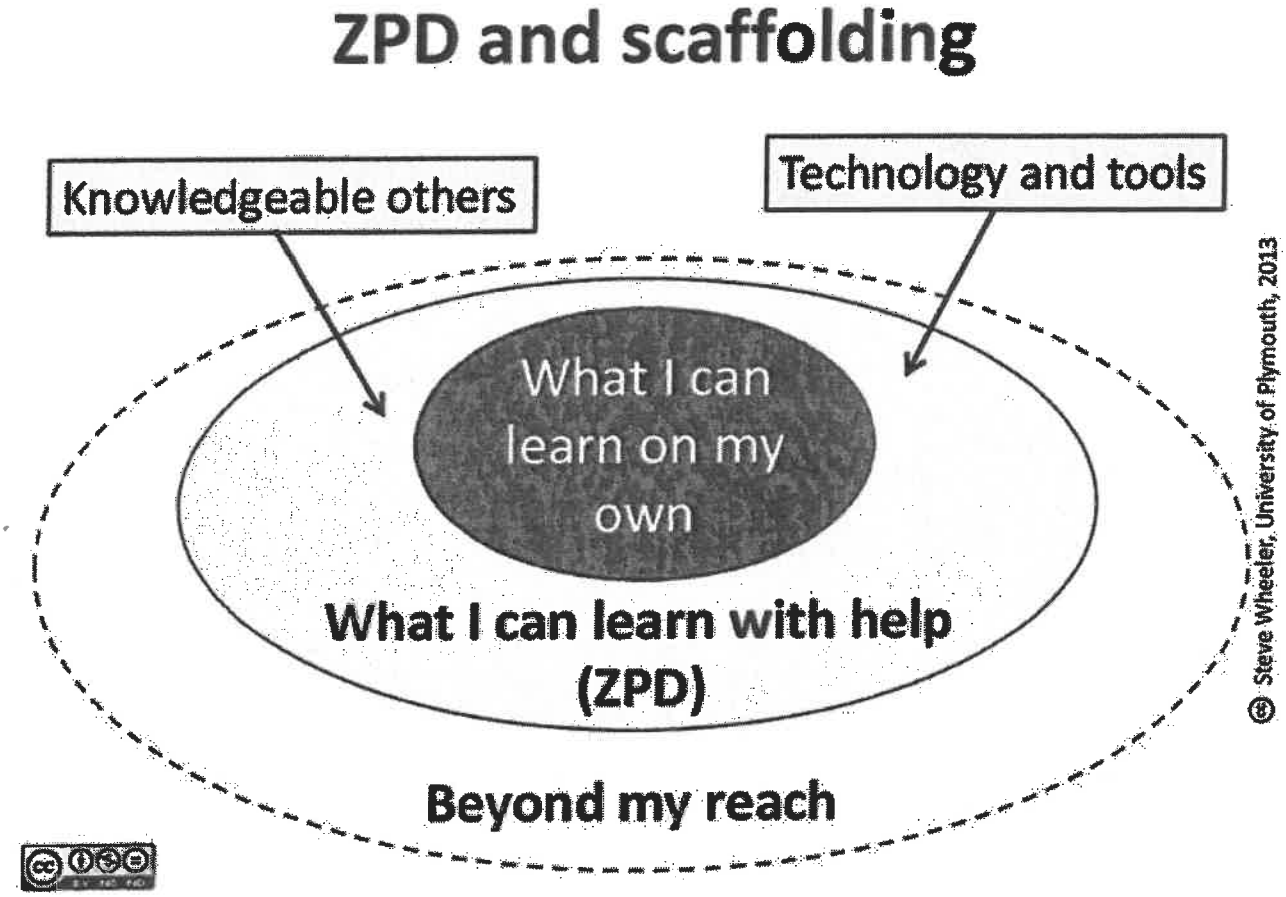
In fact, the MKO need not be a person at all. Some companies, to support employees in their learning process, are now using electronic performance support systems.

Electronic tutors have also been used in educational settings to facilitate and guide students through the learning process. The key to MKOs is that they must have (or be programmed with) more knowledge about the topic being learned than the learner does.

Zone of Proximal Development

The concept of the More Knowledgeable Other is integrally related to the second important principle of Vygotsky's work, the Zone of Proximal Development.

This is an important concept that relates to the difference between what a child can achieve independently and what a child can achieve with guidance and encouragement from a skilled partner.



For example, the child could not solve the jigsaw puzzle (in the example above) by itself and would have taken a long time to do so (if at all), but was able to solve it following interaction with the father, and has developed competence at this skill that will be applied to future jigsaws.

Vygotsky (1978) sees the Zone of Proximal Development as the area where the most sensitive instruction or guidance should

Vygotsky also views interaction with peers as an effective way of developing skills and strategies. He suggests that teachers use cooperative learning exercises where less competent children develop with help from more skillful peers - within the zone of proximal development.

Evidence for Vygotsky and the ZPD

Freund (1990) conducted a study in which children had to decide which items of furniture should be placed in particular areas of a dolls house.

Some children were allowed to play with their mother in a similar situation before they attempted it alone (zone of proximal development) while others were allowed to work on this by themselves (Piaget's discovery learning).

Freund found that those who had previously worked with their mother (ZPD) showed the greatest improvement compared with their first attempt at the task. The conclusion being that guided learning within the ZPD led to greater understanding/performance than working alone (discovery learning).

Vygotsky and Language

Vygotsky believed that language develops from social interactions, for communication purposes. Vygotsky viewed language as man's greatest tool, a means for communicating with the outside world.

According to Vygotsky (1962) language plays two critical roles in cognitive development:

1: It is the main means by which adults transmit information to children.

2: Language itself becomes a very powerful tool of intellectual adaptation.

Vygotsky (1987) differentiates between three forms of language: social speech which is external communication used to talk to others (typical from the age of two); private speech (typical from the age of three) which is directed to the self and serves an intellectual function; and finally private speech goes underground, diminishing in audibility as it takes on a self-regulating function and is transformed into silent inner speech (typical from the age of seven).

For Vygotsky, thought and language are initially separate systems from the beginning of life, merging at around three years of age. At this point speech and thought become interdependent: thought becomes verbal, speech becomes representational. When this happens, children's monologues internalized to become inner speech. The internalization of language is important as it drives cognitive development.

> 'Inner speech is not the interior aspect of external speech - it is a function in itself. It still remains speech, i.e., thought connected with words. But while in external speech thought is embodied in words, in inner speech words dies as they bring forth thought. Inner speech is to a large extent thinking in pure meanings.'

Vygotsky (1987) was the first psychologist to document the importance of private speech. He considered private speech as the transition point between social and inner speech, the moment in development where language and thought unite to constitute verbal thinking.

Thus private speech, in Vygotsky's view, was the earliest manifestation of inner speech. Indeed, private speech is more similar (in its form and function) to inner speech than social speech.

> Private speech is 'typically defined, in contrast to social speech, as speech addressed to the self (not to others) for the purpose of self-regulation (rather than communication).'

Unlike inner speech which is covert (i.e., hidden), private speech is overt. In contrast to Piaget's (1959) notion of private speech representing a developmental dead-end, Vygotsky (1934, 1987) viewed private speech as:

> 'A revolution in development which is triggered when preverbal thought and preintellectual language come together to create fundamentally new forms of mental functioning.'

In addition to disagreeing on the functional significance of private speech, Vygotsky and Piaget also offered opposing views on the developmental course of private speech and the environmental circumstances in which it occurs most often (Berk & Garvin, 1984).

Theoretical predictions	Piaget	Vygotsky
Developmental significance of private speech	Represents an inability to take the perspective of another and therefore to engage in truly relational and reciprocal communication.	Represents externalized thought: its function is to communicate with the self for the purpose of self-guidance and self-direction.
Course of development	Declines monotonically with age.	Curvilinear, increasing at the younger ages but gradually decreasing as it loses its audible quality and becomes internal thought.
Relationship to social speech	Negative: is eventually replaced by social speech.	Positive at the younger ages.
Influence of environmental contexts: Task difficulty		Increases with task difficulty: the greater effort needed to reach a solution necessitates the action regulating role of private speech.

Table 1: *Differential Predictions of Piaget's and Vygotsky's Theories.* Reprinted from: Berk & Garvin. (1984).

Through private speech, children begin to collaborate with themselves in the same way a more knowledgeable other (e.g., adults) collaborate with them in the achievement of a given function.

Vygotsky sees "private speech" as a means for children to plan activities and strategies and therefore aid their development. Private speech is the use of language for self-regulation of behavior. Language is, therefore, an accelerator to thinking/understanding (Jerome Bruner also views language in this way). Vygotsky believed that children who engaged in large amounts of private speech are more socially competent than children who do not use it extensively.

Vygotsky (1987) notes that private speech does not merely accompany a child's activity but acts as a tool used by the developing child to facilitate cognitive processes, such as overcoming task obstacles, enhancing imagination, thinking, and conscious awareness.

Children use private speech most often during intermediate difficulty tasks because they are attempting to self-regulate by verbally planning and organizing their thoughts (Winsler et al., 2007).

The frequency and content of private speech are then correlated with behavior or performance. For example, private speech appears to be functionally related to cognitive performance: It appears at times of difficulty with a task.

For example, tasks related to executive function (Fernyhough & Fradley, 2005), problem-solving tasks (Behrend et al., 1992), schoolwork in both language (Berk & Landau, 1993), and mathematics (Ostad & Sorensen, 2007).

Berk (1986) provided empirical support for the notion of private speech. She found that most private speech exhibited by children serves to describe or guide the child's actions.

Berk also discovered than child engaged in private speech more often when working alone on challenging tasks and also when their teacher was not immediately available to help them. Furthermore, Berk also found that private speech develops similarly in all children regardless of cultural background.

Vygotsky (1987) proposed that private speech is a product of an individual's social environment. This hypothesis is supported by the fact that there exist high positive correlations between rates of social interaction and private speech in children.

Children raised in cognitively and linguistically stimulating environments (situations more frequently observed in higher socioeconomic status families) start using and internalizing private speech faster than children from less privileged backgrounds. Indeed, children raised in environments characterized by low verbal and social exchanges exhibit delays in private speech development.

Childrens' use of private speech diminishes as they grow older and follows a curvilinear trend. This is due to changes in ontogenetic development whereby children are able to internalize language (through inner speech) in order to self-regulate their behavior (Vygotsky, 1987).

For example, research has shown that childrens' private speech usually peaks at 3–4 years of age, decreases at 6–7 years of age, and gradually fades out to be mostly internalized by age 10 (Diaz, 1992).

Vygotsky proposed that private speech diminishes and disappears with age not because it becomes socialized, as Piaget suggested, but rather because it goes underground to constitute inner speech or verbal thought" (Frauenglass & Diaz, 1985).

Classroom Applications

A contemporary educational application of Vygotsky's theories is "reciprocal teaching," used to improve students' ability to learn from text. In this method, teachers and students collaborate in learning and practicing four key skills: summarizing, questioning, clarifying, and predicting. The teacher's role in the process is reduced over time.

Also, Vygotsky is relevant to instructional concepts such as "scaffolding" and "apprenticeship," in which a teacher or more advanced peer helps to structure or arrange a task so that a novice can work on it successfully.

Vygotsky's theories also feed into the current interest in collaborative learning, suggesting that group members should have different levels of ability so more advanced peers can help less advanced members operate within their ZPD.

Critical Evaluation

Vygotsky's work has not received the same level of intense scrutiny that Piaget's has, partly due to the time-consuming process of translating Vygotsky's work from Russian. Also, Vygotsky's sociocultural perspective does not provide as many specific hypotheses to test as did Piaget's theory, making refutation difficult, if not impossible.

Perhaps the main criticism of Vygotsky's work concerns the assumption that it is relevant to all cultures. Rogoff (1990) dismisses the idea that Vygotsky's ideas are culturally universal and instead states the concept of scaffolding - which is heavily dependent on verbal instruction - may not be equally useful in all cultures for all types of learning. Indeed, in some instances, observation and practice may be more effective ways of learning certain skills.

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Further Information

Vygotsky vs Piaget Comparison

	Piaget	Vygotsky
Sociocultural context	Little emphasis	Strong emphasis
Constructivism	Cognitive constructivist	Social constructivist
Stages	Strong emphasis on stages of development	No general stages of development proposed
Key processes in development & learning	Equilibration; schema; adaptation; assimilation; accommodation	Zone of proximal development; scaffolding; language/dialogue; tools of the culture
Role of language	Minimal – Language provides labels for children's experiences (egocentric speech)	Major – Language plays a powerful role in shaping thought
Teaching implications	Support children to explore their world and discover knowledge	Establish opportunities for children to learn with the teacher and more skilled peers

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Developmentally Appropriate Practices

From *Teaching Exceptional Children,* "From Philosophy to Practice in Inclusive Early Childhood Programs", January/February 1998, p.45.:

Developmentally Appropriate Practice

NAEYC published a widely used position statement about developmentally appropriate practices for serving young children from birth to age 8 in early childhood programs (Bredekamp, 1987). The association compiled and published this statement in reaction to the concerns of early childhood educators with the increasing academic demands made of young children in early childhood programs and misconceptions about how teachers should provide instruction to young children.

This position statement became the most widely recognized guideline in the field of early childhood education. In 1997 NAEYC published the revised *Developmentally Appropriate Practice in Early Childhood Programs* (Bredekamp & Copple, 1997), clarifying the misunderstandings and misinterpretations that arose from a decade of extensive dissemination of the original position statement.

Based on the developmental theories of Piaget and Vygotsky, the NAEYC guidelines convey the primary message that *learning occurs through exploratory play activities* and that formal instruction beyond the child's current developmental level will result in nonfunctional, rote learning at best. Developmentally appropriate practice suggests that teachers should not attempt to direct or highly structure learning experiences and that formal academic instruction at the preschool level should not occur.

These guidelines have three dimensions, as follows:

1. *Age Appropriateness*. According to child development knowledge and research, all children grow and change in a universal, predictable sequence during the first 9 years of life. This knowledge about typical child development allows teachers to plan appropriate environments and experiences.
2. *Individual Appropriateness*. Each child has his or her own unique pattern of growth, strengths, interests, experiences, and backgrounds. Both the

curriculum and adults' interactions with children should be responsive to these individual differences.

3. *Cultural Appropriateness*. To truly understand each child, teachers and child care providers must recognize and respect the social and cultural context in which the child lives. When teachers understand the cultural context in which children live, they can better plan meaningful experiences that are relevant for each child (Bredekamp & Copple, 1997).

Teachers should use knowledge of child development to identify the range of appropriate behaviors, activities, and materials for a specific age group. As well, they should use this knowledge in conjunction with an understanding of each child in the classroom and his or her unique personalities, backgrounds, and abilities to design the most appropriate learning environment.

NAEYC recommends that instructional practices emphasize child-initiated, child-directed play activities, based on the assumption that young children are intrinsically motivated to learn by their desire to understand their environment. Teaching strategies include hands-on exploratory activities with emphases on the use of concrete, real, and relevant activities.

Developmentally Appropriate Academics: From Infants Through Kindergarten

1996 NAEYC Annual Conference
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Children who are successful in school have usually had lots of experiences with the very beginnings of reading, writing and mathematics--long before they begin school. These experiences really start at birth, last through the early childhood years, and take place very gradually.

Of course we are not talking about having babies, or even four-year-olds, memorize number or letter flashcards. Because of young children's developmental status, those activities are relatively meaningless, and an emphasis on these types of activities is not the best use of time or effort, for the children or their caring adults. In fact, introducing young children to the academic tasks that are used with school-aged children can often "turn them off" academics rather than encouraging the zest for learning that is needed for success in school. Instead, we are looking at the roots of academic learning--the prerequisites-- to be sure that children get what they need to be able to do well with school-level academics when the proper time comes.

This means that we need to recognize and build on the many child development milestones that lead to academic success. These are the things that should be emphasized in early childhood programs when we encourage children in the development of academic skills. In reality, there are hundreds of milestones that provide the underpinnings for reading, writing and math, but we show just a few on the next page. As you see, the milestones are varied, and sometimes are not obviously connected to what we think of as school-level academics.

In addition to the few milestones listed, it can not be forgotten that the social and emotional skills needed for success in school must be encouraged during the early years. Getting along with other children, feeling competent and valuable, and being able to control your actions may well be equally important to school success, if not more so.

Academic Skill Being Developed	Milestones		
	Infants	*One-Year-Olds*	*Two-Year-Olds*
Learning to understand and use words for later reading	• Cry when in need of something • Enjoy being held and spoken to • Answer a sound you make with another sound • Understand some familiar words • Say a few words, but not perfectly	• Use one-word sentences • Try to sing songs • Understand many words and simple directions • Enjoy nursery rhymes/fingerplays • Match sounds to animals • Say 2-word sentences • Listen to a short story • Sing some words to songs	• Talk in 3-word sentences • Listen to a 5-minute story with pictures • Answer easy questions that ask what, how or where • Know use of familiar things • Use 300-1000 or more words by end of year
Learning to recognize shapes and designs for later reading and number recognition	• Look at picture when named • Enjoy pictures a hard-paged book	• Point at familiar things • Match same toys • Recognize self and other people in photograph/mirror • Do 1-3 piece puzzle • Match pictures to real things • Turn familiar pictures right-side-up	• Name many familiar pictures • Match familiar pictures, and later, things by color, shape, size or texture when shown how • Point to a picture that shows an action you name • Sort easy colors and shapes when shown how • Match familiar things to their outlines
Learning to control hands and eyes for later writing of letters and numbers	• Hold and shake a small toy • Begin to scribble	• Roll a ball • Enjoy fingerpaint, play dough, paint, markers, paper • Use a spoon/cup • Peel a banana • Try to copy folding • String large beads	• Put things into a tiny opening • Help put things away • Begin to snip with safe scissors • Fit lids on jars • Catch a large ball thrown from very close • Paste when shown how • Draw a very simple design • Copy a 3-block bridge
Learning the meaning of words that will be used in later math	• Enjoy rhythms in your talking	• Enjoy nursery rhymes about counting • Enjoy watching and hearing others count	• Tell which is *one, many, big* or *little*, when asked • Know how many is *two*, and show age with fingers • Begin to understand some opposites, such as *big* and *little* • Begin to understand *same* and *different* • Try to copy someone else's counting
Learning about quantities for understanding later math	• Play with things by banging them together • Stack one toy on top of another • Fit one thing into another	• Hand a toy to someone • Stack 2 or more things • Turn one page at a time • Use big pegs and pegboard	• Enjoy playing with toys that have many pieces • Enjoy sand and water play • Nest toys or stack rings in order when shown how

Academic Skill Being Developed	Milestones		
	Three-Year-Olds	*Four-Year-Olds*	*Five-Year-Olds*
Learning to understand and use words for later reading	• Talk in short sentences • Tell a little about what they are doing • Show or tell use of something • Help tell a story • Talk about their creations • Talk about things in past and future • Play simple guessing games	• Use more than 1500 words • Use 3-5 words in sentence • Tell you what some words mean • Asks lots of questions • Often talks in pretend play • Tell a familiar story • Know when 2 words rhyme	• Talk a lot, if inclined to do so • Hear the beginning sounds of words, like *d* in *dog* • Understand place words, like *over, under* • Still confuse some similar words, like *ask* and *tell* • Tell a story from a picture book very well • Make only a few mistakes when speaking
Learning to recognize shapes and designs for later reading and number recognition	• Do easy picture matching • Make lots of scribbles and drawings • Match simple bead or block patterns • Name many pictures • Name 2 or 3 colors or shapes	• Name three shapes • Recognize own name in print • Recognize a few printed words • Name a few numbers and letters	• Know shapes, colors and color names • Do puzzles well • Sort things in many ways, usually by color • Usually tell one letter from another
Learning to control hands and eyes for later writing of letters and numbers	• Try to copy simple shapes • Use markers, pencils, crayons, paints well • Trace a cross or diamond	• Try to draw a square • Draw a person with 3-6 parts • Cut out a big circle; cut and paste simple shapes • Lace shoes • Print own name but not clearly • Print a few capital letters	• Eat well with fork, cut with knife; brush/comb hair • Try to catch small ball with 2 hands • Print name more clearly, but not perfectly • Use classroom tools appropriately • Write some, but not all, letters of alphabet
Learning the meaning of words that will be used in later math	• Count 2 or 3 things • Copy counting to 10	• Count to 10 • Know the name of some coins • Understands largest, tallest	• Say numbers from 1-20 • Understand size, which is biggest, smallest, etc. • Begin to understand time and money words and ideas • Know some fraction words, like *half, thirds, quarters*
Learning about quantities for understanding later math	• Use fingers to show age • Match one -to-one • Put together 2 halves to make a whole • Do simple block building • Put 3 things in order, such as from full to empty	• Show correct number of objects, up to 4 or 5 • Use toys with many small pieces • Enjoy measuring, pouring, comparing in sand and water play	• Continue to enjoy using toys with many small pieces • Continue to enjoy measuring, pouring, comparing in sand and water play • Measure simple things, using ruler, measuring cups or spoons • Do very easy adding, using 1, 2, 3, 4 or combining real objects

Resources for Parents and Teachers of Young Children:

Active Learning for Infants. (There are also books for Ones, Twos, Threes, Fours and Fives). By D. Cryer, T. Harms and B. Bourland. Published by Addison-Wesley.

Learningames for the First Three Years. (There is also a book for threes and fours). By J. Sparling and I. Lewis. Published by Walker.

Parents Are Teachers, Too: Enriching Your Child's First Six Years. By C. Jones. Published by Williamson Publishing Company.

The First Twelve Months of Life: Your Baby's Growth Month By Month. (There are also books for the Second Twelve Months, etc.). By F. Caplan and T. Caplan. Published by Bantam Books.