

Learning and Teaching in Preschool



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To take children seriously is to value them for who they are right now rather than seeing them as adults-in-the-making. Thus, what we ask them to do should have "horizontal relevance,"...It ought to be "meaningful to them at the time" -- for example, related to something that could happen on the way home from school. Mere "vertical relevance" isn't enough: there's a reason to be concerned if the only justification for learning something is that students will need to know it later -- for example, as part of the following year's curriculum.

-Alfie Kohn (1999)

The Schools Our Children Deserve

I hope you will reflect on the above quote when you teach in the preschool classroom. The big question many parents, teachers and other educators often ask is "How can we prepare children for kindergarten?" The question is in itself problematic because it implies that children have to be prepared for kindergarten. It also so implies that children need to be ready for kindergarten while ignoring what we know about children's development, how they learn, and that they are "eager to learn" long before preschool. The big questions should be related to the here and now:

- What is a preschool learning environment?
- What should children learn?
- What should children be taught in a curriculum?

what is a preschool learning environment?

Studies on learning, cognitive development and teaching have highlighted the importance of learning based on the relationship among individuals and the learning environment (context). Knowledge emerges as a result of activities engaged and shared in an environment that connects individuals, materials, cultural tools, and symbol systems. (Strozzi, 2001; National Research Council, 2000)

Knowledge and understanding are constructed through social interactions. Classrooms are inherently social places wherein teachers and children negotiate the curriculum together. The aim is to construct a teaching and learning environment in which children and teachers are given opportunities to make decisions, pursue authentic questions and concerns, connect what is known to the unknown, and be successful as they explore, test ideas, and discover through play, informal learning activities, and projects. Guided participation in the activities of children is the primary role of the teacher, and play and the expression of ideas through interactions with adults, peers, and the environment are the primary business of children (Hill, Fu, & Stremmel, in press; Fu, Stremmel, & Hill, 2002).

what should children learn?

In addition to a learning environment that encourages learning in relationships, the National Research Council (1999) suggests three principles of learning. The following principles, based on research, should be incorporated into the preschool curriculum (as well as in formal schooling):

1. Young children develop ideas and concepts that help them understand and make sense of their world. Learning and teaching is most effective when children build new understandings based on active reconstruction of existing knowledge and preconceptions. Teachers provide experiences and scaffold the children to build on and extend what they already know.
2. Young children need both basic factual knowledge and skills and a foundation of conceptual understanding in mathematics, science and literacy to develop expertise that will enable them to learn and make sense of their world. For example, young children should learn representational systems in early literacy, the concept of quantity mathematics, and causation in the physical world. Young children should also develop skills for gathering information, such as, identifying letters and numbers and ways to acquire information about the social and natural worlds. Thus, curriculum should be designed to promote the learning of these basic concepts and skills.
3. Metacognitive skills can help children to learn through problem solving in meaningful ways. Metacognitive skills or learning strategies enable children to reflect, question, predict and hypothesize. These skills foster evaluation and monitoring of their own learning. Teachers can guide children to learn and develop these tools for learning that are crucial for learning in all ages.

early literacy

Early, emergent literacy includes skills, knowledge and dispositions (attitudes) that are critical for future learning of conventional forms of reading and writing. Early literacy is best developed in social interactions in a literacy rich environment. The skills and knowledge base of emergent literacy promotes book and print awareness, functions of print, knowledge of narrative, letter and early word recognition, and listening comprehension. Through language rich activities, such as shared book reading, children learn language in a context that introduces them to print and enhances vocabulary development in an integrated, meaningful manner. Through shared book reading activities children also learn "conventions of print (e.g., knowing that writing goes from left to right across a page), beginning forms of printing (e.g., writing one's name), knowledge of graphemes (e.g., naming letter of the alphabet), graphemes-phoneme correspondence (e.g., the letter b makes the sound /b/), and phonological awareness (e.g., that the word bat begins with the sound /b/) (Whitehurst and Lonigan, 1998) and reading for comprehension." (National Research Council, 2000)

mathematics and science

Activities and projects based on children's interests in the world around them promote all domains of learning -- mathematics, science, literacy, develop metacognitive skills, and enhance conceptual knowledge. Mathematics and science can be found in a myriad of activities that solve real problems in the classroom and on the playground, as well as stories, block building, dramatic play, animals in the classroom and found outdoors, and so on. In many activities children learn about emerging mathematical and scientific concepts that encourage them to develop and use the tools of scientific thinking and testing: observe, record, explore changes, make predictions, ask questions, and find ways to test out their hypotheses. Children learn about

living things, physical changes in solids and liquids, motion, speed, and balance; the needs and life cycle of living things; quantity, and measurement, etc.

The preschool curriculum should have activities that include the following basic concepts or ideas of mathematics (Ginsburg, Balfanz, & Greenes, 1999):

- *Number* -- counting and meaning of numbers
- *Shape* -- identify and construct 2 and 3 dimension shapes; their properties
- *Putting together and taking apart* -- promotes exploration of adding and subtracting, and relations between sets and subsets
- *Spatial relations* -- exploration of relations such as in front of, behind, above, below, left-right which are important to navigating their surrounding and the world
- *Measurement* -- explore quantity and physical attributes such as length, weight, temperature and money
- *Patterns and predictions* -- introduction to patterns such as shapes, numbers, and sounds and encourage children to detect patterns for prediction

Preschool curriculum should also include early science processing skills as an integral part the classroom activities as children investigate concepts and evaluate their learning:

- *Observing* -- notice different properties of objects and events using the senses
- *Classifying* -- grouping objects and events according to their properties
- *Measuring and Using Numbers* -- be able to:
 - Describe quantity using physical attributes such as length, weight size, temperature
 - Estimate
 - Record data with the help of teachers or by themselves with drawing and other tools
 - Understand Spatial relationships
- *Communicating* -- using language, drawings and other tools to describe observed events and relationships
- *Inferring and predicting* -- making predictions of what might happen based on past observations and experiences, including cause and effect relationships
- *Defining operation* -- define terms and ideas used in the context of one's experiences and communicate how these terms are used, such as "what do you do" and "what you observe"
- *Making hypotheses* -- propose explanation based on what is observed
- *Experimenting* -- explore, manipulate, investigate to find what happens

Teachers play an important role in planning, supporting and guiding children to learn about math and science pre-concepts through the use of various teaching strategies that scaffold the children in process. All of these begin with the teacher observing and listening carefully to the children's interests, and understanding how children learn in order to plan activities that are real and meaningful in the lives of the children. In scaffolding the children in activity settings, teachers may use a variety of techniques such as asking the open-ended questions of what, how, and why; modeling; giving feedback; and cognitive structuring (providing structure for acting and thinking).

In short, preschool children should learn by engaging in activities that are real and meaningful to them - activities that encourage the development of skills, knowledge, ways of thinking and learning, and a disposition for learning. It is important to remember that preschools teach

children the early skills for literacy and science and mathematics development in an environment that encourages learning through social relationships.

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