

Importance of Learning Science during Pre-school Period

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ABSTRACT

The paper underlines the importance of early childhood period as it is considered as the foundation period for all kinds of development. The author stresses that the teachers and parents should provide congenial environment to the children to explore the nature and learning environment is enriched with the materials capable of arousing the natural curiosity of children. She concludes that children are naturally scientists. Hence, the learning environment should be simulative and enriched with natural play materials that can arouse interest of children for learning science concepts.

First five years of life is considered as the most critical period in life because it sets the foundation for all the development viz., physical, mental, emotional, intellectual, language, etc. Moreover, it is the period in which curiosity to learn and foundation of learning can be made. Recent researches show that pre-school children are well prepared for learning science concepts and it is the right period to provide basic science concepts through quality learning experiences and exploration.

Gelman (1990) establishes that science knowledge acquisition is rapid during the early years. Children have the ideas, beliefs and explanations of variety science concepts that they observed or experienced in their daily life. Through play way methods and their observation they learn about size, shape, colour, living and non-living things and immediate physical environment that provide the foundation for learning physical science, life science, etc.

To different people, science means different things. For some it's a list of facts, for others it's a body of knowledge, including facts, concepts and principles (Carin et.al , 2003) . More than a list of knowledge and facts, it is a process of continuously exploring the nature known as scientific investigation.

Our knowledge and understanding of the world is improved by science. It helps the kids to develop an innovative mind and run positive change. A young child has lots of queries such as "why is the rainbow colourful?", "What gives sky the blue color?" And so on which becomes an essential reason why Science education in early childhood is important (Yoon et.al, 2006). Young children are always exploring and building curious questions inside their mind. The more their queries are given proper scientific explanation, the more their thirst will develop.

Buckleitner (2002) pointed out the major benefits of learning science at early childhood are: life-skills development, inculcation of love for science, aids literacy and language development, encourages enquiry and important thinking, enhances decision-making skills

Science helps the students in some of their vital life skills development such as analytical approach to things, problem solving ability, good communication skill and so on. All the experimental results in science are not quick; some takes time to show the result which intern teaches patience and perservance to students. Science has relevance in our everyday life so it's the most important subject a child can learn.

In the next decade an estimated 75 percent of jobs within the fastest growing industries would require Science, Technology, Engineering and arithmetic (STEM) skills. As a result, there's been a robust emphasis on STEM education in schools to organize students for the longer term. Science educators are fortunate therein they need a singular opportunity to instill a love of science within the early years, just by harnessing a child's natural curiosity. Creating amazing science experiences in infancy education will inspire children to require finding out more and exploring on their own.

Often young learners struggle to include detail into their writing. Scientific reporting encourages the young learners to write down accurate description of what they see and observe, a practice they can apply to all other forms of writing.

Enquiry and methodology are integral to science education and practice. Through scientific enquiry, the study of science enhances critical thinking skills which will be applied to any area of learning. Critical thinking cultivates curiosity and is important to understanding and solving problems. It allows children to seek out meaning in their learning and make real-world connections that impact their lives.

Science teaches children to not take information without any consideration. It helps them separate fact from fiction. Children are taught to hunt information from multiple sources and to believe evidence to work out truth. This process provides a solid foundation for them to make independent opinions and make decisions, a skill that will serve them well throughout all facets of their life and academic pursuits.

The government of India has had under consideration a National Early Childhood Care and Education (ECCE) to

reiterate the commitment to promote inclusive, equitable and contextualized opportunities for promoting optimal development and active learning capacity in all children below the age of 6 years (ECCE Policy, 2013).

The members of the National Focus Group on ECE unequivocally agreed to call the National Focus Group on ECCE rather than ECE. Within the context of the work of the National Focus Group, the rationale for replacing ECE by ECCE is as follows:

From conception till 8 years is known as early childhood in a child's life, a period that presents a developmental continuum. The opposite reason for extending the span of infancy from 6 to eight years is to make sure a gradual and smooth transition from preprimary to primary education, which may be a structured and formal learning system requiring effective interface. The term 'Care' has been added in recognition of the very fact that young children need care and nurturing. Additionally to their health and nutritional needs, their psychosocial and emotional needs even have to be met adequately for his or her holistic development. Education is a process of acquiring learning, skills, habits etc. It also indicates a crucial focus, viz., to organize the young child to enter the formal educational stream/system.

Thus, the term ECCE refers to a philosophy of providing opportunities/experiences to young children up to eight years aged so as to market their holistic development, also as arranging and providing services and support systems to communities and families to satisfy the requirements of their young children. For the sake of convenience, and for purposes of programming and institutional location, ECCE are often divided into three sub-stages: birth to 2+, 3 to 5+, and 6 to 8+. Each sub-stage is often located during a different institutional setting.

The 86th Constitutional Amendment Act, 2002, which effectively releases the State from its obligation to provide care and education for kids below 6 years, is noted as a negative development.

The report cites a fragmented approach and divided responsibilities as a number of the most reasons for this grim situation. It can be concluded that ECCE must be introduced within the framework of EFA and UEE, with accountability for all programmes for teenagers above 3 years lying with DEE & L, while programmes for youngsters below 3 years are going to be the responsibility of DWCD.

Play based learning is purposeful learning

The assumption that plays is a frivolous use of classroom time and in opposition to rigorous instruction demeans its value

and its vast potential (Harlen, 2001). "Many people, including some educators, believe that we need to choose between play-based learning opportunities and rigorous academic standards when integrating the two is very possible," says Concordia University-Portland adjunct professor, Angie Stratton, M.A.Ed. "For example, a kitchen/cooking center could contain a water level also as measuring cups, dishes and 'pretend' food. Paper and pencils/crayons/markers, etc., are often wont to write recipes, make lists, and make advertisements for a replacement restaurant (Martin D, 2003). The creative possibilities are endless. Not only does this play-based learning center address language arts standards, but it also touches upon speaking and listening standards as well."(Harlan et.al, 2004)

Markezich (1996) explains that the activities cover a range of scientific topics and utilize a variety of formats, often incorporating learning from other areas such as language, numeracy, and artistic and physical development. Examples include the following:

- Observing behavior of safely contained items, for example, beads in plastic bottles
- Handling and observing behavior and interactions between substances such as oil and water, corn flour and water, corn flour and oil, and milk and washing-up liquid and using food coloring to enable these observations
- Exploring density by investigating whether objects float or sink in a variety of different liquids
- Making color spinners or compartmentalized color sorters
- Using static electricity to move tissue paper shapes
- Using creative activities to facilitate discussion and learning about the items being made, for example, making spiders with egg boxes and pipe cleaners

Natural learning experiences for children are generally set by adult. Hence, it is their responsibility to provide interesting and rich environment to the children. The environment should be design in such way that the children get opportunity to learn through concrete experiences by using sense organs. The teachers' understanding and approaches to science have deep influence in developing scientific curiosity among children. The learning environment should be simulative and enriched with natural play materials that can arouse interest of children for learning science concepts. There should be ample scope for observation and experimentation.

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