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The Role of Educators in Introduce Technology In Early Childhood Through Science Activities

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Abstract

Advances in technology closely related to science, with the development of science, the technology will also be growing rapidly. Therefore science is a great way to introduce technology to children. Technology is the application of scientific concepts. With the various concepts of science, man can create a useful technology to facilitate people in solving everyday problems. Indirectly when parents and teachers (educators) introduced the concept of science, is to introduce technology to children. Early childhood had a curiosity that is very high on the phenomena that occur in the environment. especially on the technology that is around children. But the child's curiosity about this technology is sometimes not appropriately stimulated both parents and teachers. During these educators had erred in introducing the technology on children. They tend to introduce sophisticated electronic equipment such as computers, laptops, tablets, gadsget, smartphones, and other. By way of introducing the technology through electronic device, can stimulate children to become users. Indirectly inhibit the children to think creatively in finding a technology. Should be able to make a child happy in finding a technology, not just users only. The process of finding a child in technology can be stimulated through simple science activities. This positive impact on aspects of child development and scientific attitude. Expected in the future, these kids are going to make a big change in the world through technology invented.

Keywords: Activity Science, Technology, early childhood

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Background

During this time parents and teachers with the technology to introduce advanced electronic devices such as laptops, tablets, smart phones, gadgets, and more. Indeed, these children look very modern and follow the times. Moreover, the sophisticated electronic devices have own prestige for owners and users. Behind the fame of existing electronic devices, stored real negative thing when children use them constantly. This makes children and kids addicted to using it more as a user are not alone.

Though parents and teachers should be introduced to the concept of technology is not the technology results in the form of an electronic device. With children recognize the concept of technology children will be motivated to create a technology. When someone creates a technology professional, of course, when childhood, he must know in advance the technology and enjoys. In order for a child enjoys the concept of technology, parents and teachers should introduce the concept of technology in a fun activity, namely through science activities.

Greatly affect the progress of science technology, with the development of science, the technology will also be growing rapidly. Therefore science is a great way to introduce technology to children. Technology is the application of scientific concepts. With the concept of science, can create a useful technology to facilitate people in solving everyday problems. So is the case with the children. When children do science activities, as well as children are finding a technology, though simple.

Science activities will have a positive impact on the children, not just on the introduction of technology, it can stimulate children to think creatively in finding a technology, it does not directly stimulate adult child later became a scientist. Direct positive impact on aspects of child development and scientific attitude. Later in the future, these kids are going to make a big change in the world through technology he created.

Based on the above explanation, that parents and teachers play an important role in introducing the technology in early childhood. The introduction of technology on children to the concept of technology, compared to the results of the technology. The introduction of technology can be provided with a fun activity that is through science activities.

B. Theory of the Study

1. Role of Parents and Teachers in Introduce Technology

Parents and teachers play an important role in introducing the technology on children. Not only as modeling for children, parents and teachers are a main gate that determines the child's first impression of the technology. Because with a good first impression, make children motivated to megenal more deeply about the technology.

The term technology cited by Badarudin (2006:122) mentions that the technology means the study (the Greek: logos, which means conversation, speech, word) systematic about skill (techne, meaning art, craft, or skill). Three centuries later, the notion of widespread technology, in addition to the mean machine, the definition also includes the way technology, processes, and ideas. In the twentieth century, technology is broadly defined as "ways or activities that allow humans alter or tamper with the environment (natural, human, and all creation)". By that definition, he has covered everything possible be done to improve human life. Parents and teachers how to introduce technology to children is to introduce the benefits of the technology. That technology is a means used by humans to solve everyday problems that it faces.

This is supported by the National Science Teacher Association in Martin (2001:12) "Children should construct understanding of science concepts and processes, see aplications of science and technology to everyday life". This means that children must construct their own understanding of the concepts and processes of science and technology, to observe the application of science and technology on everyday life. In other words, in addition to its benefits, parents and teachers also have to introduce the concept and process technology that is very close to the child's environment, for the child will more easily find a way to solve simple problems in daily life through science concepts.

Engineering Technology". Reinforced by Kumar (2000:10-12) which states that "Basic Science Abstract Applied Science Based on this, it is clear that a technology created by the foundation of science. For the science very big influence on a technology. By teaching science to children as well as teach children to learn the concept and the process of finding a technology. So the role of parents and teachers in introducing technology in early childhood is to introduce the benefits, concepts, and processes simply from a technology through science activities.

2. Science Activity

Science is a systematic knowledge about the various things that are around us that can be verified. Science activities at school, very rarely involve children actively. Schools are more likely to give evidence in theoretical. Whereas in science learning children are expected to be actively involved in the process of finding the problem, determine the provisional hypothesis or conjecture, to what is the most appropriate way to handle it. The rights of children to actively participate during this constrained because the parents and teachers who do not understand what essence contained in a child's active involvement in the activities of science.

The National Science Teacher Association (NSTA) is extremely active in the reform of science education at all levels in Martin (2001:12) argues, the NSTA says that elementary science should emphasize learning science concepts and process through the use of activities that children involve; manipulating materials and thinking about the activity curricula should be organized around conceptual

themes and should provide opportunities for children to study real-life, personal, and social problems related to science and technology.

Means NSTA is a very active association in the reform of science education at all levels. NSTA said that science should emphasize learning basic science concepts and processes through the use of activities that engage children in manipulating materials and thinking about activities in the curriculum should be organized on the theme of conceptual and should provide opportunities for children to learn about real life, personal, and social issues related to science and technology. NSTA based on active involvement of children in science activities is highly recommended. Both in the manipulation of material to think that eventually the child will have many opportunities to learn to surrounding environment.

Surely there are many positive benefits when children are active in science activities. In line with that expressed Lawson (2008:1) that,

Students develop scientific literacy trough active inquiry, problem solving, and decision making. With each activity program, student are encouraged to explore, investigate, and ask questions as a means of heightening their own curiosity about the world around them. Students solve problems through firsthand experiences, and by observing and examining objects within their environment. In order for young students to develop scientific literacy, concrete experience is of utmost importance-in fact, it is a essential.

This means that in developing the scientific literacy of a child can be done through the activity of an active investigation, problem solving, and decision making. With each program of activities, children are encouraged to explore, investigate, and ask questions as a means of enhancing their own curiosity about the world around them. Children solve problems through direct experience, and by observing and examining objects in their environment. So that preschoolers can develop science literacy, the real experience is very important and in fact, it is the most important. In other words that there are many positive effects and benefits when children are actively involved in running the activity of science. Where the real experience is the cornerstone of this activity.

Furthermore, Martin (2001:32) reveals "The six basic processes of science. They are as follows: "the basic processes in the implementation of science activities will provide many opportunities for children to engage actively and positively impact the child's ability to recognize and resolve simple concept that is simple problem around the environment in everyday life. .

1. Observing, observing the child's activity in the objects, all the events, even the phenomena through the five senses. .
2. Classifying, children in group activities, classify objects, events, and phenomena that children encounter in everyday life environments of children. .

3. Communicating, child's activity in communicating a variety of objects, events, and phenomena encountered in the child's daily life with the child's own language. Obviously with simple language, both verbal and nonverbal. .
4. Measuring, measuring the activity of the child in the extent to which objects, events, and phenomena observed child. Children were able to observe changes in the physical and concrete through the senses.
5. Predicting, in predicting a child's activity or making hypotheses or conjectures will be changes to objects, events, and phenomena that children observe through the five senses.
6. Inferring, concluding activity of the child in the child the facts observed through the proofs by using a simple experimental process. As well as comparing the predictions with the fact that going from a simple proof.

(McCormack & Yager, 1989; Padilla, nd) in Martin (2001:33) states "these 6 processes, Referred to as the" basic ". Process are fundamental to all scientific investigation. Each process you are asked to develop an activity of your own dealing with the process you can use in early childhood science classroom. "In other words, the above six processes, a fundamental process in all science activities. Any process can be developed on science activities for early childhood level, of course, with a much simpler process.

Science activities for young children is a simple science activities. Where children were introduced the concept and were actively involved in the process. This was disclosed by Tim Doctorrabit (2005:3) argues that science is the basis of various knowledge. Appropriate science learning will provide the ability to think conceptually and develop students' logic. Thus, it is important to instill understanding to children from an early age that learning science is fun and very beneficial to their lives.

Science learning activities are divided into the paper, experiments, and games
1. Activities with paper, to teach children to understand the concept of science with various activities including: cutting, folding, and pasting paper, connect, classify, sort, and coloring.
2. Experiments, intended to make children familiar with the concept of science is not only a theory but as children thought to express the question of what, why, and how so that children get their own answers through experimentation activities they do.

3. Game intended to facilitate the understanding of concepts through a variety of fun games. to impact science learning will positively to the development of scientific attitude and child. Surely the five aspects of the development include: moral-religious, physical, cognitive, language, and socio emotion. Scientific attitude of a child involves, as expressed by Salandanan (2002:17-20) that,

Scientific attitudes is a way of thinking and reacting in an orderly, systematic and Methodical Manner. Commonly exhibited is an Analytic approach and a conscious effort to find clues or

Evidences that may serve as instant guides in choosing a course of actions. Simple inquisitiveness can easily be Considered scientific as opposed to habitual, unaffected, easy acceptance of strange Happenings. An objective way of interpreting occurrences rather than a wiki way likewise reveals a scientific mind. The attributes of a scientific mind (critical-mindedness, persistence, creativity, responsibility, open-mindedness, curiosity, Objectivity, humility)
.

Means scientific attitude is a way of thinking and reacting in an orderly, systematic and methodical. Commonly exhibited an analytical approach and have a high curiosity to find clues or evidence that can serve as an instant guide in choosing a program of action or actions. Simple curiosity can be considered scientific as opposed to habit, is not affected, receptive and open to the strange happenings. How to interpret objective events rather than subjective manner and also revealed to the scientific mind; critical-thinking, perseverance, creativity, responsibility, open-mindedness, curiosity, objectivity, humility. By providing a stimulating science, will give children the opportunity to develop a scientific attitude.

So based on the above opinion, the science activities are activities of children in observing, classifying, communicating, measuring, predicting up to conclude the facts, objects events and phenomena in the environment through the five senses as a form of introduction to the concepts and the active involvement of children in activities that will positively affect aspects of child development and scientific attitude.

3. Linkages between Technology and Science

Science is the basis of a technology. Impact on the advancement of science an technology advancement. Such opinions expressed Kumar (2000:11) that the conventional wisdom about the relationship between science and technology is represented as a tree. If the roots are watered, the science, the fruit, in the form of technology that will automatically grow. In this case the technology is the result of the application of science. Which is when the science is well developed, it will be manifested on the technological advances that good anyway. .

Lowson further argues (2008:1) in view of the relationship between program hands-on science and technology (1) To relate science and technology to society and the environment, (2) To develop the skills, strategies, and habits of mind required for scientific inquiry and technological problem solving, (3) To understand the basic concepts of science and technology. This means that program hand-on science and technology that aims to link science and technology to society and the

environment, (2) To develop the skills, strategies, and habits of mind required for scientific inquiry and problem solving in technology, (3) To understand the basic concepts of science and technology.

Gonzales (2005:10) He has 5 different models proposed for considerations, roommates take into account the views that have been more Influential in the relations between science and technology. In this he proposes 5 different models for consideration, in view of the relationship between science and technology.

1. Technology is reducible to science (ie, ontologically technology depends on science), roommates means that either it is applied science or is an application of science .
2. Science is reducible to technology (ie, science depends on technology ontologically) 'roommates can be seen as an instrumentalist position insofar as science Appears as an instrument to dominate nature trough technology (a view held by some Philosophies focused on praxis, such as different version of pragmatism, Marxism ... or even nihilism) .
3. There is an identify of science and technology. This thesis is a way of understanding "techno science", but is so strong that even its supporters-mainly contructivitist -try to emphasize the identity in methodological terms-as a common process-rather than in ontological terms (as being the same entity)
4. Science and technology are both ontologically and causally independent. It is a parallelist view: they move According to the same rhythm but without interaction .
5. There is an ontological independence between science and technology, but they are in a causal interaction.

This means that (1) can be reduced to a science technology (ie, depending on the ontological technology of science), which means that the technology is applied science or a science applications, (2) Science is relegated to technology (ie science depends on technology ontological) 'which can be seen as an instrumentalist position as far as the instrument of science appear to dominate nature through technology (a view held by some philosophy focused on the practical, such as different versions of pragmatism, Marxism ... or even nihilism), (3) There identifying science and technology. This thesis is a way to understand the "techno science", but so powerful that even the supporters-especially contructivitist-try to emphasize the methodological identity in general terms-as a process-rather than in terms of ontological (as the same entity), (4) Science and technology independent both ontologically and causally or causation. This is the view parallelist: they move with the same rhythm but without interaction, (5) There is an ontological independence between science and technology, but they are in a causal interactions. 5 models of the relationship between science and technology to prove that they have a relationship and influence between each other.

Powered by Kilmer & Hofman opinion Brewer argues in "Science as the more speci" knowledge about specific phenomena, the processes used to collect and evaluated information ... and as a recently added aspect, (technology when defined as) the application of science to problems of human adaptation to the environment. Science means specifically as "knowledge about a particular phenomenon, a process used to gather and evaluate information and a new aspect was added, (defined as current technology) the application of science to problems of human adaptation to the environment". In this case again touted the technology as the application of science. And science is the basis for the development of a technology.

So the relationship between science and technology have clearly illustrated the various opinions of various experts from the above, science and technology have a relation to one another. Science a positive impact on technology, nor is the container application science technology. With children too young to know the science means to know technology .

4. Early Childhood

Early Childhood is the young man who created God with all unique personalities, behavior, and appearance. Division called the age range of early childhood is children aged 0 to 8 years old. This statement is in line with Bredekamp: NAEYC in Deiner (2010:574) states "Developmentally Appropriate practice in early childhood programs serving children from birth through age 8". This means the DAP in early childhood programs serving children from birth through age 8 years. "In other words, children who are under 8 years of covering baby, toddler, toddlers, preschoolers and early school children referred to as early childhood .

But the Indonesian government split into baby's early childhood up to 6 years. It is listed in the Ministerial Regulation No.58 (2009:1) that "In the process, the public has shown concern for the problems of education, parenting, and early childhood protection for 0 to 6 years with various types of services in accordance with the conditions and capabilities of existing , both formal and non-formal. "In other words, the Indonesian government established that the said younger children in Indonesia are children aged 0 to 6 years include: infant, toddler, toddlers, and preschoolers. Supported by the opinion of the reviewing Sheridan range of early childhood through the stages of play. Sheridan (2002:2) states that "It provides a detailed description of children's play from birth to 6 years, Including an outline of elements of spontaneous play in roommates most engage children during the early years of their lives." Opinions above means that provide a detailed description of play that carried the children from birth to 6 years. Broadly speaking, the elements of spontaneity play, performed most of the children involved during the early years of their lives. That is Sheridan believes that the process of spontaneous play is felt only on infants to preschool children. For the early childhood learning for the right done playing. Same play activities provide a fun activity for children is one of them with science

activities.

Associated with providing science activities for young children. According to Tim Doctorrabit (2005:3) states that science is the basis of various knowledge. Appropriate science learning will provide the ability to think conceptually and develop students' logic. Thus, it is important to instill understanding to children from an early age that learning science is fun and very beneficial to their lives. In other words, science is given to early childhood, is a fun activity for the benefit of those in the future.

Based on the above theory, it can be concluded that early childhood conceptual thinking skills and develop logic through stimulation in the form of a fun science activities.

C. Conclusion

Parents and teachers have an important role in introducing the technology in early childhood. Stimulated the introduction of this technology through science activities. science activities are activities children in observing, classifying, communicating, measuring, predicting up to conclude the facts, objects events and phenomena in the environment through the five senses to solve everyday problems. This is done as a form of introduction to the concepts and the active involvement of children in science activities that will positively affect aspects of child development and scientific attitude. Indirectly to make children happy and motivated in finding a technology, not only to the user only. Later in the future, these kids are going to make a big change in the world through technology he created.

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