

Critical Thinking and Technology in Young Children: Do We Really Need Technology to Help Children Improve Critical Thinking?

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ABSTRACT

Psychologist defines critical thinking as human capability to gather information, reason and deduce an idea based on their experience. Young children now days tend to question all the things around them, and it is part of development. one of the important part of children development is to improve their cognitive skill include their critical thinking. This capability uses in daily life that give the children ability to communication, decision making, solving problem and take some action for that. There are so many things to improve children's critical thinking, such as games, socio-dramatic play, and technology. Some said, you can use technology to improve many aspects of critical thinking and some say it is only worst the things. Some claim that using technology such as video interactive, games, television, digital tablet or else can trigger children's critical thinking, but some said technology can squash child's critical thinking. Now days kid tends to depend on gadget in daily basis, such to spend some lazy time another, that make that affect their critical thinking's skill. Critical thinking is like a pathway, it will lose its skill if you are not use wisely and continuously. So they conclude if children don't use their memory and analytical skills, they will lose it over time. Essentially, these devices are taking over the basic functions of the brain like memory and critical thinking.

Keywords— Critical thinking, Technology, children's development

I. INTRODUCTION

They called childhood or early years development as golden age, this is related to the rapid development of children in this stage. In this stage, all of children development's aspect growth rapidly include physical, language, thought, and emotional. During this process children dependency will decrease over the time. Children develop in holistic ways, holistic mean how all of development aspect work together and emphasis it's importance, include physical, emotional and psychological. This learning methods teach children on how to take a challenge, face the crisis, solving the problem and develop their social and communication skill. In this approach children engage in activity in nature, such playing with plant, animals and bugs. Exploring is one of the most favorite activity for children because they can be play and learn at the same time. In additional to holistic development, children also grows at varying speed. According to developments in Emahl and Lawrance in the book Kostelnik et al (2017) showing that child development goes through the same sequence of developments according to their own time schedule. The timetable is the result of maturation and environmental factors and leads to intrapersonal and interpersonal variation in child development.

Sometime parent is such a problematic person, in one side they want the best thing to improve all their child's development aspect include critical thinking. But in other side, there's no effort to do that and provide their children with something that they did not need yet such gadget, pc and game player. This thing give a dilemma for everyone, and it create a question such "do they really need that? do that stuff really something that can improve their skill or worst it?"

Lately parent give a privilege to their children to use gadget to make children comfortable at home for entertainment and education purpose. According to survey in Southeast Asia, about 2.714 parent or 98% of the sample who participated in the study stated that they give freedom to their children to use technology such smartphone, computer pc or tablet pc. this survey come from some country such Singapore, Malaysia, Thailand and Indonesia. In fact all the parent state that they're give this privilege to support their education but most of the children use smartphone or computer for entertainment purpose (Alia, 2018). Moreover, some researchers have reported about the use of technology in learning, such as, moodle (Suwandi, Refnaldi, & Ardi, 2013), WhatsApp (Li, 2017), Instagram (Mahmudah & Ardi, 2020) those study focus on adult learner. However, there is no study focus on early childhood education.

Based on these data parents provide gadgets as education. However, in reality in the field of early childhood use gadgets as entertainment, like games. Nuswantoro., Et al from Global Medical and Health Communication stated the use of gadgets can affect the quality of vision, social development, emotional and physical-motor, neurological, cognitive, moral, language, early childhood. Various problems found from using gadgets for too long for children this include effect on children's cognitive development such their critical thinking ability.

Critical thinking is one of the most important aspect in children development, because critical thinking link to the children's judgment. Based on Ennis (1987) see critical thinking as the way people thinking on reasonable and reflective on decide what to believe or do. This critical thinking give people idea about what to choose, conduct a good judgment to the problem and solving that in the best way then provide self-correcting. Critical thinking also links to how people understand such a complicated connection, idea, argument, and reasoning. See the best and effective way to solve the problem.

II. DISCUSSION

One of the most important cognitive aspect is critical thinking. In his life, child will face with problems which demands a solution. Resolve a problem is such a difficult thing to do in children, it includes such complicated thinking process, and before able to solve the problem, children need the ability to find the solution to their problem. According to Yulianti (2010) "thinking ability is skill or ability to use reason to consider, decide, analyze, criticize to do something well and carefully based on consideration or reference ". To maximize children's thinking skills can be integrated in learning activities can be help children to be thinkers the critical one. If the ability to think developing, children can cultivate acquisition of learning, can find various alternative solutions problem, help the child develop ability mathematical logic and developing knowledge of space and time.

Critical thinking is ability to think about the problem and trying to solve it based on past experience, knowledge of logical judgment, and reasoning skill (Saputri, 2014). Critical thinking demands great effort to examine every conviction or assumptive knowledge based on evidence supporters and conclusions continued the result. Ennis (2011) added the purpose component of critical thinking in its definition which is widely used, namely, "Reasonable reflective thinking focused on deciding what to believe or do ". It means that critical thinking is sensible and reflective thinking which focuses on deciding what should be trusted or done.

The cognitive psychological approach see critical thinking in two ways. First, based on cognitive psychologist (Stenberg, 1986) see critical thinking in behavior and experimental approach where the idea is focus on how people's ideal and fact thinking, how people should

react to some problem. Second, its focus about what kind of action will they take based on their habit rather than "ideal or "standard" thought. In conclusion they're told that there is several kinds of critical thinking include some skill and procedure. (Lewis & Smith, 1993).

Kids in particular tend to asked and curious about something, they will be asked and recheck for many times about it. Such when they see something move on the ground, they will asked what is it? Is it some kind of animal? Or is it something you can eat? They will ask you several time till they're sure with your answer. Such when they're meet a hole in the ground, they will ask what is it? Who make this hole, what the function of this hole, how can there's a hole in the ground. They will look for the answer, and recheck the answer for several times.

In olds days, children will looking the answer in many possible ways, such looking in the book, ask people around them or observed it several time and conclude the answer, but with technology this day such smartphone or pc, they can type the word in search engine and got the answer. In the past, when people have family dinner or tea time, they will chat about random things, their children will ask some unexpected question and then will answer it together. Example: "why this table in round shape? Why do we use spoon or forks to eat, or why this fruit in some color or shape". In the old day, they will trying to answer the question together but now days what you need to do is open google and type the question you want to ask, and google will provide the answer for us. On one hand, it's such a great that we can get an answer for every question instantly about all the question that we had. On the other hand, it is also mean make our child lazy. They are no longer need effort to looking for the answer like their brain are freeze and unable to process all the information. Only with one click and the you get an answer.

Based on Wolpert (2007) who conduct survey, more than 50 studies in learning and technology (include multi-tasking and the use computer and internet) state that society this day change their learning method effect by technology use, and this also affect our critical thinking and analysis ability. We know in today society it is really rare to saw a young kid read a book in public space such station, train, hospital or somewhere else. If in the old day young kid used to read for pleasure than enhances their thinking instead they're use their smartphone to playing video game and watched their favorite tv show.

Based on Wolpert (2009) who conduct analyzed over study about 2 group who use internet during their lesson. In 1st group the one who give the access to internet and the other one is note. The result show that the 1st group who can access internet tent to cannot process what the speaker say and in the test at the end of lecture, the one not give to internet access can do better that those did it. The other study about the news, it is found the one who focus on the news and ignore the "news crawl" across the bottom remember more information rather than the one who distract by information on the bottom.

You can apply that research to kids as well. When they know the technology such internet and browser, they will use it to looking the answer for their question. Critical thinking will grow as much as we use it over the time, because it is use past experience to process information, if kids looking for answer instantly it will dull their thinking skill because the answer for each question only stay in short term memory. With technology uses children can't thinking for them self, so what will they do to face problem outside the world.

For people who pro for the idea that technology can improve child's critical thinking state you can use video game interactive to improve their critical thinking. Video game with many question and game which trigger their thinking can be used to improve their thinking. Or you can internet to help you answer a hard question and link it to your own knowledge and perspective.

Beside Gadgets have a number of positive effects related to the characteristics and development of early childhood. Based on research conducted by (Kiftiyah, Sagita, & Asr) comparison of research subjects explained that children of the three subjects showed areas of development of cognitive areas in the imagination, language, curiosity and concentration. The most prominent and rapidly developing YouTube video stimulation for these three children is in terms of language and imagination. This is certainly inseparable from the age of the child who at that time was in the stage of imitating the environment, so that the stimulation of English-based videos, songs and prayers can be recorded properly by the child in his memory. In addition, subjects between one and two show a developmental trend in color recognition.

Support that idea, Kurniawati (2013) in Kiftiyah (that audio-visual stimulation of video is able to provide an optimization of the development of color knowledge more effectively in early childhood, while findings in the area of children's imagination, the interesting thing is the way children interpret their environment according to the imagination of what contained in the contents of the video provided, this concept is the same as the development of egocentrism in children which is characterized by perceiving the outside world as they wish. The behavior of an active child here can be said to be a potential kinesthetic intelligence that will develop in the child.

III. CONCLUSION

Like two blades, gadgets can have both positive and negative effects. As teachers and parents, we must be smart to respond to the use of gadgets in children, how can we be able to use gadgets in a more positive direction and minimize the negative impact caused by gadgets for achieving optimal development in children.

With so many interesting features offered and often make children quickly familiar with it. Some say give some kind of gadget to your child will help their critical thinking and other development, on the other side it will numbed

your child critical thinking skill. So it is up to you on how to take advantages of gadget.

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