

Potential Utilization of ICT-based Education Applications for Elementary Students in the Sub-Urban area

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Abstract —Law No. 35 of 2014 is a form of government attention to the sustainability of the lives of Indonesian children with diverse backgrounds. Urban and urban sub-regions are a natural division of territory for developing countries such as Indonesia. Every elementary school student, wherever they are, has the same right to education. This study aims to determine the potential of using ICT for students living in sub-urban areas. The method used in this study is qualitative descriptive with respondents aged 10 years to 12 years. The conclusions in this study are elementary students in suburban areas that have the potential to develop knowledge with the help of technology-based educational application innovations.

Keywords: *ICT, Elementary Students, Education Application*

I. INTRODUCTION

At present education is inseparable from human activities. Under any circumstances, anywhere, and at any time humans cannot resist the effects of the application of education. As an example of the development of information and communication technology, it has become a living part of society. The development of information and communication technology has influenced the world of education, especially in the learning process.

Einstein (Miarso, 163: 2016) "No problem can be solved from the same consciousness that created it; we must learn to see the world a new. "Based on the quote, it means that to solve a problem is not by changing the glasses that are owned but through a different perspective on the phenomenon being faced. Parent's anxiety about the trend of using gadgets in elementary students who are becoming the subject of discussion should be a phenomenon that can be entrusted together through the world of education. Cases of troubled children with education based on data from the Indonesian Child Protection Commission from 2011 to 2016 were 2496 complaints cases. Of course this is supported by

the government contained in the Act to protect children. Law of the Republic of Indonesia Number 35 of 2014 concerning amendments to Law Number 23 of 2002 concerning child protection Article 1 Paragraph 2 states that child protection is all activities to guarantee and protect children and their rights in order to live, grow, and develop, and participate optimally according to human dignity and dignity, and get protection from violence and discrimination.

Responding to this verse, in the field of information technology and communication education has many roles. According to Rosenberg (2001) (in Mukarom and Rusdiana, 2017: 15) the development of the use of information and communication technology led to five shifts in the learning process, namely: (1) from training to appearance, (2) from the classroom to other places and not only during study hours, (3) from paper to online computers or channels, (4) from physical facilities to network facilities, and (5) from cycle time to real time.

The role of ICTs which will be a fun and positive preventive step for elementary school students in utilizing technological sophistication such as those contained in the widespread use of more specific gadgets are smartphones among children. The phenomenon of technological development has influenced Communication and Information Technology in Primary Schools. Many potentials can be developed to improve the quality of learning through Information and Communication Technology in Primary Schools. The potential of ICT in elementary schools is influenced by aspects of teacher qualifications, the location of a school, as well as student learning motivation.

According to Mukarom and Rusdiana (2017: 20-21) through the utilization of Information and Communication Technology, the distance learning system can support the improvement of the quality of primary and secondary education, and can support the enrichment of learning

through the operation and utilization of ICT and e-learning. Then, Mukarom and Rusdiana also expected teachers to be able to utilize information and communication technology in learning, applying various approaches, strategies, methods, and learning techniques that educate creatively in the subject matter they are taught.

Then Uno and Nina (2011: 61) also argued that the potential of ICT in the future, as follows: 1. The development of open education with distance learning mode. 2. Sharing resources together between educational / training institutions in a library network and other educational instruments changes the function of being a source of information rather than just a bookshelf 3. The use of interactive information technology devices, such as multimedia CD-ROMs, in education gradually replaces television and video.

Abdulhak, 2010 (in Mukarom and Rusdiana, 2017: 59-60) suggests that in general the ICT has four potential as follows.

1. Expand access to education

ICT causes learning activities to be limited to the walls of classrooms, but can take place anywhere and anytime as long as the student is connected to the internet

2. Improve education efficiency

Students can do academic activities in accordance with curriculum requirements even though they do not spend their time in class, so they can accelerate the process of achieving mastery level and broadening learning choices according to the ability and condition of students through independent learning activities

3. Improve teaching and learning process

It is expected to produce effective learning activities that can encourage students' intellectual curiosity and delight students so that it encourages students to play an active role in the process of forming their knowledge.

4. Improve the management system

Can be used to help manage and process education and learning data. This is done to produce an educational institution and quality learning activities that are able to provide accurate, easy to use educational data and can be obtained on time

Conditions in the field imply that Smartphone-based technology has entered various parts of the country. Not only for urbanites, even students at SD Sub Urban have used Smartphones as one of the communication tools in various fields as well as to surf enjoying all the applications that are loaded by Smartphones. Elementary students who have a Smartphone are considered to be reasonable for some audiences. There are some who care about the impact, there are some who do not care, there are even some who use

smartphones as a weapon that keeps children quiet in places to just play games.

The rapid development of technology is consciously or unconsciously can affect the ability of the human brain's working system to get everything practically. However, it is not possible for education to take advantage of the widespread use of gadgets in the hands of elementary school students. There are several innovations offered to educators who involve parents to motivate children's learning through an educational application program on android for elementary students.

The demands of the era movement, demand someone to innovate in his life. The movement that continues to roll will not be dismissed simply because technological literacy is also needed as an effort to communicate and have competitiveness in the outside world in order to have the concept of thinking more openly towards phenomena and clever in addressing a movement through the utilization of opportunities in every event that is considered dangerous even though.

II. EXPERIMENTAL

A. *Methodology of the study*

This study uses quantitative descriptive research methods. The research was designed through a quantitative survey and then to see the results was done through descriptive description. Best (Sukardi, 2017) descriptive research is a research method that attempts to describe and interpret objects as they are. This research is also called non-experiment, because in this study researchers did not control and manipulate variables. While quantitatively the research also uses surveys.

B. *The study population and its sample*

The survey was conducted through giving questionnaires to students between the ages of 10 and 12 to find out the activities carried out during the use of the gadget for grade IV, V, and VI at SDN Tanjungrejo, Kabupaten Sukoharjo.

III. RESULTS AND DISCUSSION

According to Piaget's stage of cognitive development, elementary school age children enter the concrete operational phase (Sumantri, 8: 2016). The concrete surgical stage occurs in children aged 7 years to 11 years. At this stage there is an improvement in the ability to think logically. New capabilities include the use of reverse operations. Thought is no longer centralistic but decentralized, and problem solving is not limited by eccentricity. There are also elementary students who enter the formal operation stage because when he goes up in class VI the student is 12 years old. At this stage students have

symbolic abstract and pure thinking possible. Problems can be solved through the use of systematic experimentation.

Thinking ability Elementary students who achieve concrete thinking mean that students can solve problems that they observe concretely by linking logic that begins to develop at the stage of concrete thinking. Students will more easily understand the concepts given through direct involvement or students can find a way out of the problems they face through visualized objects so that children experience difficulties in verbal problems.

In accordance with Piaget's theory and the stage of child development that reaches a concrete operational students begin to be presented with IT-based learning even though the geographical conditions of children are in sub-urban areas. The sample of this study was taken from a manual survey at the Sekolah Dasar in the sub-urban area of Central Java with students aged 10 years to 12 years. The ages of 10 to 12 years are the object of this study because it is adapted to the aim of researchers to find out the potential use of educational applications for suburban Indonesian students.

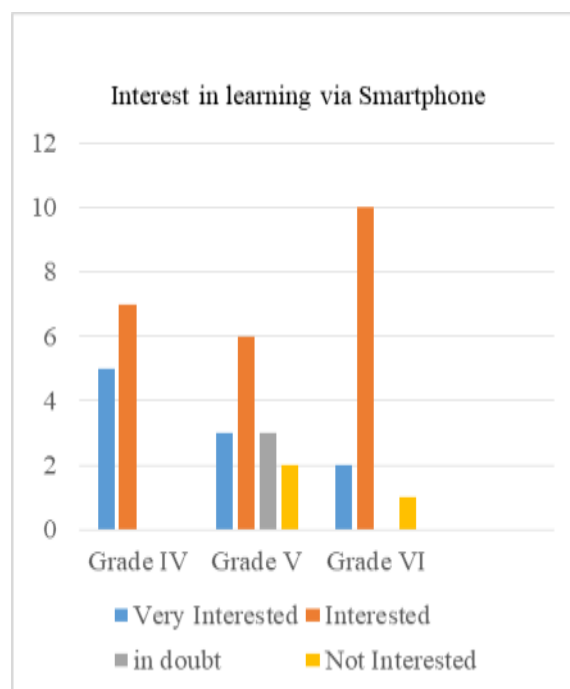
There were 39 respondents who filled out the questionnaire. Consists of 22 male students and 17 female students. A total of 25 respondents like to use smartphones. The duration of smartphone use is an average of less than one hour as many as 26 respondents and 8 respondents more than 3 hours. Respondents in general as many as 26 respondents used smartphones for social media activities such as BBM, WhatsApp, Line, Twitter, Facebook while interest in games and youtube tended to be still under the use of social media. As many as 23 respondents stated that when using a smartphone it is still under adult supervision. However, it does not rule out the possibility that there were respondents who did not experience supervision when using the gadget, namely 9 respondents stated themselves free to use a smartphone without adult supervision. As long as the respondents used a smartphone, the response of parents as many as 30 respondents admitted that adults often reminded them not to linger.

The use of smartphones is important for elementary school students, according to the responses of 26 respondents who stated that smartphones were important to themselves. While relativity between very often and often in using a smartphone to surf on google looking for material, there were 18 respondents said "yes." Furthermore, there were 16 respondents who had an application on a Smartphone that contained school lesson material and 12 respondents said they had an application summarizing the subject matter on a Smartphone they. As many as 20 respondents chose to recommend to make a summary application based on the subject matter of mathematics which is still a favorite subject to be studied for elementary school children. Respondents' interest in technology-based learning is high enough that it can be observed through the

answers of 33 respondents who stated that they were very interested and interested in learning independently through the help of a Smartphone at home.

Elementary students are generally interested in learning new things and have a high curiosity to engage in activities that interest them. This is in accordance with the characteristics of elementary students (Sumantri, 2016) Characteristics of students mentally or cognitively that is always wanting to learn new things, can understand from all the images that are, very creative and happy to find new things, know the concepts correctly and wrong, easy to remember, writing and language skills continue to grow.

CHART I. Interest in learning via Smartphone Student in Sub Urban Area



This characteristic is a contagious spirit for children in Indonesia who do not only live in urban areas to get to know technology even further. For suburban students who also have equal opportunities, they also have the right to enjoy technological sophistication in the era of competition in the global world. This potential was reflected in the interest of 33 respondents who had an interest in learning the material in their smartphone subject summary with a total of 39 respondents who filled out the questionnaire. This spirit can be supported through informal guidance which is proven that 30 respondents are supervised by adults or parents when they are functioning smartphones. Indirectly, the caring attitude shown by parents has a positive impact on innovators to develop an educational-based application among elementary school students.

The milestone of civilization began by preparing young people who have competitiveness from an early age. If 26 respondents said that smartphones were important to them, even though their use was still not optimal, 26 respondents used smartphones for social media purposes. This can be used as a measuring tool to adjust the needs of elementary school students through a more educational application in the hope that students' creativity will continue to be processed in productive times. The balance between curiosity and proper treatment in increasing the level of thinking of elementary students is more rational and logical in solving problems related to daily activities.

IV CONCLUSION

From the findings above, it can be stated that students aged 10 to 12 years in suburban areas have the potential to develop their learning abilities through the use of technology-based learning resources that can be applied through gadget-based educational application innovations. This is supported by the cooperation of parents who take part in paying attention to their children's behavior when operating gadgets while at home. If the potential of making an education-based application is developed it will have an impact on students' motivation to learn something in a more creative and fun way.

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