Electronic media and language development of early childhood

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Abstract. Early age is a period where children have not been able to develop the potential that exists in them. One such potential is language development as the result of cognitive development. Playing is one way to develop language. Because young children like to play at school, teachers should use the method of playing in learning. In playing, teachers can use electronic media because early childhood nowadays is the Alpha generation, the technology generation. The purpose in writing this article was to find out the relationship between electronic media and language development in early childhood. The method in writing this article was to review research journals related to electronic media and early childhood language development and it was supported by references from books related to the topic. The result was that the children learnt through play and interesting things such as using electronic media so that they could unfold their language development.

1. Introduction

Language is a communication tool used to interact. Language in early childhood is an important element for the future of children, so that language development in early childhood needs to be stimulated from the start. According to Hurlock, early development was more important than subsequent developments, because the initial basis was greatly influenced by learning and experience [1]. Based on this, the teacher is the most influence person on children's language development at school.

Language development is closely related to cognitive development. According to Vygotsky, states that language is a tool for expressing ideas and questions, and language also produces concepts and categories of thinking categories [2]. Language development for early childhood includes four developments i.e. listening, speaking, reading and writing. The development must be balanced in order to obtain optimal development of reading and writing. Language development in early childhood in Indonesia includes understanding receptive language, including the ability to understand stories, commands, rules, enjoy and appreciate reading; expressing language, including the ability to ask questions, answer questions, communicate verbally, retell their understanding, learn pragmatic languages, express feelings, ideas, and desires in the form of graffiti; and literacy, including understanding the relationship of form and sound of letters, imitating the shape of letters, and understanding the words in the story.

To develop aspects of language development, the teacher should adjust to the characteristics of early childhood i.e. playing because they love to play. Thus, the teacher conduct learning activities by implementing the playing as a method. Because of their high curiosity, they like new things.
In the learning process, teacher can use games or interesting media to develop children's language development. Attractive media is not necessary to be expensive but suitable for their age. As early childhood likes interesting things and images so that the media should consider their characteristics. This has been supported by Barr et al. [3], Linebarger and Vaala [4], Rideout and Hamel [5], Radesky et al. [6], Schmidt et al. [7], Valkenburg et al. [8], Zimmerman, Christakis, and Meltzoff [9] stated that 90% of children at 2 years old have spent 1-2 hours watching TV and spend more time on mobile devices [10].

Based on the description of findings, then the teacher should adjust learning with the era of electronic media and adapt to the characteristics of early childhood. Thus, early childhood can be interested to and like learning activities especially to developed aspects of language. In addition, it also early sets children to face global competition.

2. Method
In this literature review, the first step was to find a framework that integrate technological knowledge, pedagogical knowledge and content knowledge or TPACK on a reliable and quality server such as Scopus, Sage publication, and Elsevier. In searching the server, we restricted the journal publications for the last 3 years, i.e. 2016 to 2019. The journals were mainly education journals, early childhood research and practice, and journals of early childhood literacy. After that, looking for supporting theories in books that related to development of language and technology. Finally, reviewing journals and studying books, the writer selected based on the alignment of research between the problem formulation and the data analysis, the data collection instruments and the instruments, the data analysis and the procedures as well as the relationship between the topic of the title written by the author, which entitled electronic media and early childhood's language development.

3. Language development of early childhood
Early childhood is the nation's next generation so that aspects of child development need to stimulate properly and correctly. Early childhood development includes aspects of cognitive development, language, physical-motoric, social emotional and moral religious values. One of aspects of early childhood development is language development. There are three aspects of language that could be learn directly or indirectly such as sound, structure, and vocabulary [11].

Early childhood understand sounds since fetus, said Lecanuet and Granier Deferre in Gleason in the 4 days after birth, the baby could distinguish his mother voice than other person [11]. This proves fetus also experience learning process (in utero learning). It means before and after the baby was born, he/she has learned the sound first. The longer, the child gets older, and the mastery of sound increases. In the early stages, children recognize vocal sounds such as /a/, /o/, /u/ and /i/ and some dead letters or consonant sounds such as /p/, /b/, /m/. Children then have rapid sound mastery. This development begins with a babble i.e. the unmeaningful sounds of language. Finally, children can recognize complex sentence structures.

The development of structure or grammar of the child as same as the development of baby. During childhood before entering school, children have mastered the pattern or structure of the language. The development starts from the mastery of word structure. For instance mama eats, mimic, and so on. In the end, the mastery of complex sentence structures, even not only in the use of questions but also statements. Questions that are mastered by children in the beginning are only related to what, who, and everywhere. While questions related to the concept of why, when, and where, those have not yet emerged. This is because, the child's concept of abstract thing is not yet mastered. This problem is very reasonable, because cognitively according to Piaget children have not been able to think abstractly while they accidentally obtain syllables from the surrounding environment [12]. Thus, children's vocabulary increase day to day and they develop their mastery.

The development of children's vocabulary occurs in line with the development of other linguistic aspects that are greatly influenced by their curiosity i.e. through the use of language in their social context. It appears that the development of this vocabulary depends on their interactions and their
environment. From the interaction, they directly uses the acquisition of vocabulary in the conversation. So, these three aspects (sound, structure, and vocabulary) will determine their ability to understand others while communicating. Children are said to understand their interlocutors in speaking if each other reacts while communicating.

Communication cannot be separated from human life and has been formed since humans were born [10]. Sachs states that communication is the center of interaction between individuals, groups and institutions [13]. Communication can be done in a written and direct way, but all of these methods use language to communicate. Mastery of language is very closely related to children's cognitive abilities. The speaking system of children describes the systemic in thinking. The one which included in developing languages other than speaking is the ability to listen, read, and write.

Early childhood's language development has not fully developed. However, its potential can be stimulated through active communication by using good and correct language. The quality of language used by caretakers will affect their speaking skill and Vygotsky argued that language development get along with cognitive development, both develop in a social sphere. Vygotsky revealed that language, in its earliest forms, has a social basis [14].

There are 5 components that children develop when learning languages i.e. phonetics, semantics, syntax, morphemics, and pragmatics [15]. At the beginning, children's language knowledge is only receptive such as they understand specific language characteristics but have not been able to shows their knowledge. However, this will develop according to its development.

The first component of language is phonetic which refers to the relationship of language and symbols. The International Phonetic Alphabet in the 1800s was faced with accurately describing all sounds of language through written or coded systems [13,16,17]. Thus, in 1988 the International Phonetic Alphabet was formed [18]. After the International Phonetic Alphabet (IPA) was formed, the IPA provided symbol or technique how to speak more accurately in writing, because it shows certain phonemes. Alphabet used is Roman language a lot and combine new letters and diacritic marking needed to show phonemes in specific languages [15].

The second component of language is semantic obtained by children when learning oral symbols or meaningful oral language. According to Vygotsky, semantic development in children is related to conceptual knowledge [14]. For example, semantic knowledge of children develops when they understand the meaning of a word, the word flower, for instance, children have understood the parts of flowers, the colors, the texture, and the benefits of flowers.

The third component of language is syntax, syntactic knowledge is the ability to combine words into meaningful sentences or expressions. For example, the phrase “the beautiful butterfly was on the flower” is not “the butterfly beautiful was on the flower” or the big stone is not a stone big, because the adjective is directly followed by a noun.

The fourth component of language is morphemic knowledge. Morphemic knowledge refers to syntactic knowledge, the children learn several words that have a meaningful relationship but their uses vary. Like the word sad, very sad, and sad or in English the use of words in a timely manner such as paint, painting, painted.

The last language component is pragmatic knowledge, this knowledge includes knowledge or awareness of the overall meaning of communication and how the language is used to obtain the meaning. For example, sentences consist of word "please" at the beginning are often used to ask for help, such as "please get my book in the cupboard".

From the components of the language that have been described, each language knowledge is important for effective children's communication skills. Each component of language knowledge influences the knowledge of other languages, so that language knowledge has no limits or does not stand alone.

Language in early childhood from 3 years old children have learned about 6 to 10 new words per day [19]. Then, the first word spoken was when they turns 11 months with a range of 8-14 months, then half of the child's words can be understood by others when they are 19 months with the age range of 15-30 months. Then, when they are 2 years old, they produce about 338 words which could be
understood in an hour, but the range is very large, ranging from 42 to 672 words and use around 134 words per hour with a range of 18 to 286 words [20].

Language development is closely related to other developments, such as cognitive and social. McCabe and Meller revealed that language not only affects cognitive growth but also social competence [21]. Children who learn to speak and succeed interact with others to develop more effective learning strategies and reading skills that are inversely proportional to children who fail to develop language appropriate to their age will get risk of experiencing social isolation, reading problems, and other academic difficulties in school [22]. For this reason, schools and families must provide stimulation and media that support their early language development.

In order to develop language in early childhood, teachers must pay attention to the characteristics of early childhood who loves to play. By playing, children learn and play is life and vice versa [23]. All children love to play, every child likes games because through playing children learn to understand the environment. Children who were born as Alpha generation, they use more technology including the use of tabs, computers, cellphones and other electronic devices. Thus, as a teacher, you should make a game in accordance with their generation and characteristics of early childhood.

4. Electronic media of early childhood

The implementation of learning in early childhood needs to pay attention to the systematic and regular way of working to facilitate the learning process. The method is an effort to systemize learning as proposed by Mursid i.e. it is a tool used to achieve the goal with steps that have been systemized and organized [24]. One method for early childhood education is the method of playing while learning. Playing is an activity that is most liked by all people even more so by children as their world is playing. Piaget in Mayesty stated that playing is an activity carried out repeatedly for pleasure [23]. Playing for early childhood is an indirect learning platform, play activities can also develop mental, spiritual, language, social and motoric skills of children which are very important in supporting their developmental stages.

The approach to learning by playing can be done using digital media such as by utilizing gadget or mobile devices developed this time. The use of digital media must be under parents or adults supervision. This approach can be found by using an internet connection. For example, their desire for something can be directed by searching in cyberspace, for example a child wants to know penguin birds, without having to visit the area of penguin birds, the child still can see it through pictures or videos without visiting its area or zoo.

Not only by using internet connection, but also it can be done by television. Because children prefer watching TV, this proved by research that 90% of children aged 2 years have spent 1-2 hours watching TV [3-9] and start spending more time on mobile devices [10].

Children who were born in the digital age are comfortable with digital devices that might make confuse to parents and grandparents [25]. In the digital age, these devices help to gain knowledge and communicate with each other. For example, a cellphone that initially functions as a communication tool, has now undergone a change of function as an entertainment media and learning media. Nurrachmawati added that tablet PCs or smartphones do not only contain applications about learning to recognize letters or images, but there are entertainment applications, such as social media, videos, images and even video games [26].

In fact, children will use their gadgets more often to play games than to study or play outdoors with peers. It has been conducted research that all parents (94%) stated that their children used to use technological tools to play games. Most children (63%) spend a maximum of 30 minutes to play a game. While 15% of respondents stated that children play games for 30 to 60 minutes while others interact with a game for more than one hour [27], this is also supported by Rideout et al, that 20% of all media consumption occurs on cellphone devices (cellphone, iPod, or game) [28].

As parents when they find the same case such as children spend more time playing games on gadgets, then there are several solutions. According to Ferliana i.e. children under the age of 5 could be given a gadget [29]. However, it has to be considered the duration of its use, for example, they may play but
only half an hour and only during leisure time, introduce the gadget once a week, for example Saturday or Sunday. In addition, they should continue to interact with other people as a matter of fact, children who use a gadget of at least 2 hours can affect to their psychological condition every day, for example, children become addicted to playing gadgets rather than doing supposed activities such as learning.

Whereas for educators and education management, they can use technology in class with students, and how to provide education or training to teachers and professional development [30]. For example, the teacher can invite them to open a picture of favorite animal and tell their friends or open a video, for example the video of helping mother to cook, then they are invited to retell the video contents. Whereas for education management, for example, the principal can provide training in creating learning designs and exchanging opinions with other peers through, for example, using WhatsApp application.

5. Conclusion
The early childhood is a period where they have not been able to develop their existed potential. One potential that existed on them was language development. In early childhood education, learning must be interesting so that they could learn easily so that their language development could unfold. The interesting learning could be done using media.

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