

The Urgence of Digital Media Development Based on "Motion Graphic" for Early Childhood

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Abstract. This research is oriented to the urgency of developing digital media for early childhood with the aim of describing the types of digital media owned and needed by schools such as digibooks, coloring applications, interactive videos, storytelling applications; and interactive game applications (a combination of digibooks, coloring, interactive videos and storytelling), as well as digital media owned and needed by schools for developmental aspects such as religious and moral values, cognitive, physical motoric, language and socio-emotional early childhood. This study uses a qualitative descriptive method with the research subject, namely educators and education staff at the PAUD level in West Java Province. The results of the study include 1) the type of digital media for early childhood that is most widely owned by schools, namely interactive video types (53.1%); 2) the types of digital media for early childhood that are most needed by schools are types of interactive game applications, namely a combination of digibooks, coloring, interactive videos and storytelling (67.4%); 3) Digital media owned by schools for aspects of language development (61.7%); 4) Digital media needed by schools for aspects of socio-emotional development (71.8%).

Keywords: Urgency, Digital Media, Early Childhood.

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INTRODUCTION ~ Educational media for early childhood are physical and digital objects that function as intermediaries in the delivery of information effectively and efficiently related to the process of building human behavior for the better and of course worthy of being used as intermediaries in shaping the quality of future human life. Educational media is a form of effectiveness and efficiency of what is an intermediary in the process of delivering information in education (Bordalba & Bochaca, 2019). Educational media for early childhood is called an educational game tool (APE). APE for early childhood can be created in physical or digital form in accordance with the abilities and needs of children's potential development (Heinich et. al. 2002). One form of APE that is important to be developed is APE in digital form.

Digital comes from the word digitus which means there are 10 fingers which are then processed in the form of symbols 1 (one) and zero (0). The two symbols are assembled into a form of coding so that a software system is realized which is reflected through the input and output hardware of a computer device (calculation machine/number processing machine) (Gandana, 2019). In line with that, Kryukov & Gocin (2017) and Ilomaki & Lakkala (2018) explain that the context does not mean that educators have to pursue the concept of coding fundamentally in digital, but tend to be more towards the development and use of ready-made coding in the form of computer applications as media. appropriate digital-based educational media builder for early childhood.

The reasons for developing this digital-based media include: 1) The function of

education is divided into 2, namely the function of conservation and the function of innovation. The conservation function is that educating children is based on normative cultural values (local wisdom), while the innovation function of the process of educating Dutch children is based on the latest developments in science and technology as preparation for facing life and future life (Dewantara, 1967, 1977; Herlambang, 2018).; Vasalou et al, 2017; Kryukov & Gorin, 2017). 2) This digital-based learning media is also an implementation of the industrial revolution era 4.0 / digital revolution / disruption era or towards the era of society 5.0 which aims to create a society that can solve various social challenges by including industrial revolution 4.0 innovations (IoT, Big Data, Artificial Intelligence). (AI), robots, and various economies into every industry and social life). In summary, what needs to be considered is the prediction of future technological conditions after the era of the industrial revolution 4.0, namely the era of society 5.0. which puts forward the concept of life and life through digital life competition (disruption) (Kasali, 2019; Demir et.al, 2019; and Nagy & Hajrizi, 2019). One of the impacts of the disruptive wave in education includes mobile and responsive educational applications (Kasali, 2019).

Heinich et al (2002) and Mourlam et al (2019) stated that the use of digital concepts as a vehicle for children's play makes it much more meaningful in the perspective of building insights related to life and is much more efficient in conveying information and facts that tend to be difficult to reach physically. This digital concept can also be more effective in showing objects (enlarging the small,

reducing the large, bringing the distant and showing hidden objects). Furthermore, Nuraina, et al (2018), Gandana (2019), and Nobre et al (2019) describe several types of digital media for early childhood, namely 1) Digibook (Digital Book) containing illustrated stories; 2) Coloring app; 3) Interactive videos; 4) Storytelling application; and 5) An interactive game application that combines digibooks, coloring, interactive videos and storytelling.

Research on digital media in early childhood was carried out by Naughton S. M. et al. (2018) entitled "How digital environment in schools might be used to boost social skills developing a conditional augmentation hypothesis." The result is a digital-based school environment as a stimulation for the development of social skills (Naughton S. M. et al, 2018). Nobre J. N. P. et al's research (2019) entitled "Quality of interactives media use in early childhood and child development: a multicriteria analysis." This study examines the quality of the media used in early childhood education through measuring aspects of child development (Nobre J. N. P. et al, 2019). Ruest S. et al (2018) research entitled "The inverse relationship between digital media exposure and childhood flourishing". This study examines the actions of parents using digital media in facilitating children's play at home (Ruest S. et al, 2018). A similar research focus was also carried out by Ihmeideh F & Alkhaldeh, M. (2017); Gerwin, R. L.; Kaliebe, K.; & Daigle D. (2018); Ruest S., Gjelsvik A., Rubinstein M., & Amanullah S. (2018); Nuraina, Damayannti E., & Ikawati A. (2018); and Yasbiati, Gandana G., & Rahman T. (2019). All of these studies focus on digital media

as a stimulation of the development and use of digital media as an educational game tool. Digital media research based on motion graphic design is still rare or has not been implemented.

One of the multimedia that is currently developing in social media is video motion graphics. This media is a combination of text, animated images and sound which is generally used as a "video explainer" in the marketing world. However, its use is now expanding to other fields such as entertainment, education and health. Motion graphics are considered quite easy to make using available design software such as Adobe Illustrator and Adobe Flash (Cone, 2013). Motion graphics are media that use video recording and/or animation technology to create the illusion of motion and are usually combined with audio for use in a multimedia output (Betancourt, 2013). Motion Graphic is a form of animation in which several sets of shapes are choreographed together using a variety of effects to produce interesting footage (Carra, et al., 2018).

Several studies related to motion graphics were carried out by Carra (2018) entitled "Grammar-based Procedural Animations for Motion Graphics". The results of his research, motion graphics are animated forms of several collections of shapes choreographed together using various effects to produce interesting recordings in displaying and learning grammar so that they become expressive and interesting (Carra, 2018). Mokhtarzadeh et al, (2020) with the title "Hearing Aids Maintenance Training for Hearing Impaired Preschool Children with the Help of Motion Graphic Tools". The results showed that the training of hearing aid maintenance skills with

motion graphics was significantly effective for children. The results of this study can be used by educators, teachers, professionals, and parents to train children with disabilities or normal students (Mokhtarzadeh et al, 2020).

Ajiprabowo and Handriyotopo's research (2020) entitled "Design Of Promotion Media For Reog Ponorogo With Motion Graphics Of Wayang Kulit". The results of his research indicate that the design of Reog Ponorogo motion graphics can be the right medium to provide information about Reog art to the public, especially millennial youth. This motion graphic media is quite comprehensive, because it is equipped with supporting media such as posters, print ads, merchandise and Instagram (Ajiprabowo and Handriyotopo, 2020). Amali et al. (2020) research title "Motion Graphic Animation Videos as Alternative Learning Media". The results of his research are animated motion graphics videos as an alternative media for learning Indonesian history that are proven to be very suitable based on the media and material so that they are suitable for use in the learning process, students give positive responses regarding the use of motion graphic animation media and active participation of students during the Indonesian history learning process with categories very well (Amali et al, 2020). Similar research was also conducted by Hapsari et al, 2019; Neta et al, 2019; Shah, 2020; Yuniarni D et al, 2020; Puspita, N et al, 2020; Efendi et al, 2020. The results of the study focused on the use of motion graphics as a promotional media and learning media at the primary and secondary levels, while at the early childhood education level, it is still rarely implemented.

Based on this background, it is necessary to conduct a needs analysis and development of motion graphic-based digital media. The needs analysis of the development of digital media is based on digital media owned and needed by schools and digital media owned and needed by schools for aspects of early childhood development.

The research method used is descriptive qualitative with the aim of being able to provide an overview of digital media owned and needed by schools and digital media owned and needed by schools for aspects of early childhood development. The research subjects are educators and education staff at the PAUD level in West Java Province. Data collection techniques through interviews and questionnaires as well as data analysis techniques through qualitative descriptive related to digital media owned and needed by schools, as well as media owned and needed for aspects of early childhood development.

RESEARCH METHODS

RESULTS

Types of digital media for early childhood wich owned by school

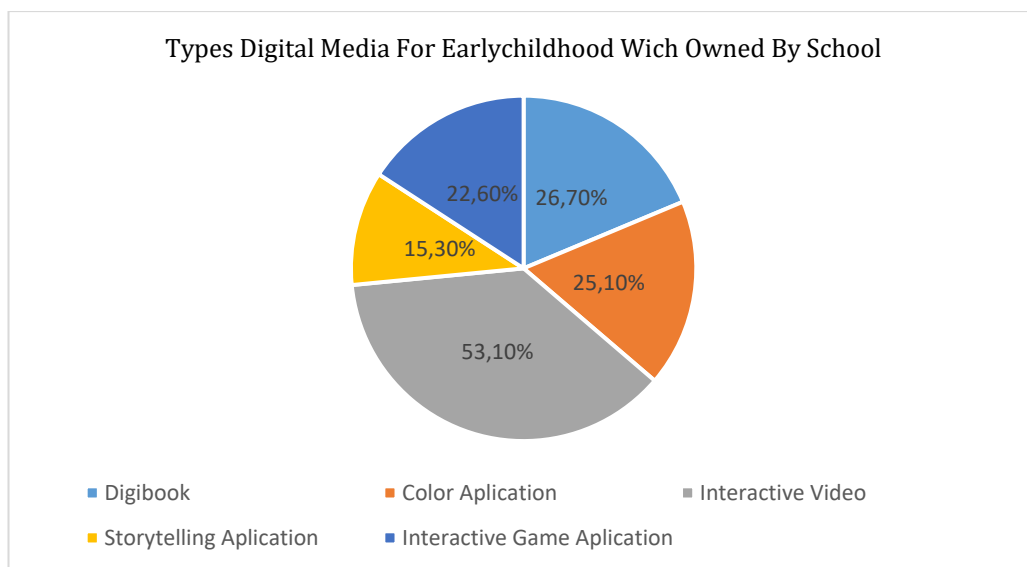


Figure 1. Types Digital Media for Early Childhood Wich Owned by School

The types of digital media for early childhood owned by the school are presented as follows. The types of digital media are digibooks which contain 26.7 %, Color Application 25.10%, Interactive Video 53.10% Storytelling Application 15.30% and interactive game applications

(a combination of digibooks, coloring, interactive videos and storytelling) 22.6%. The most common type of digital media for early childhood is interactive video, while the least owned type of digital media for early childhood is interactive game applications.

Types of digital media for early childhood that schools need

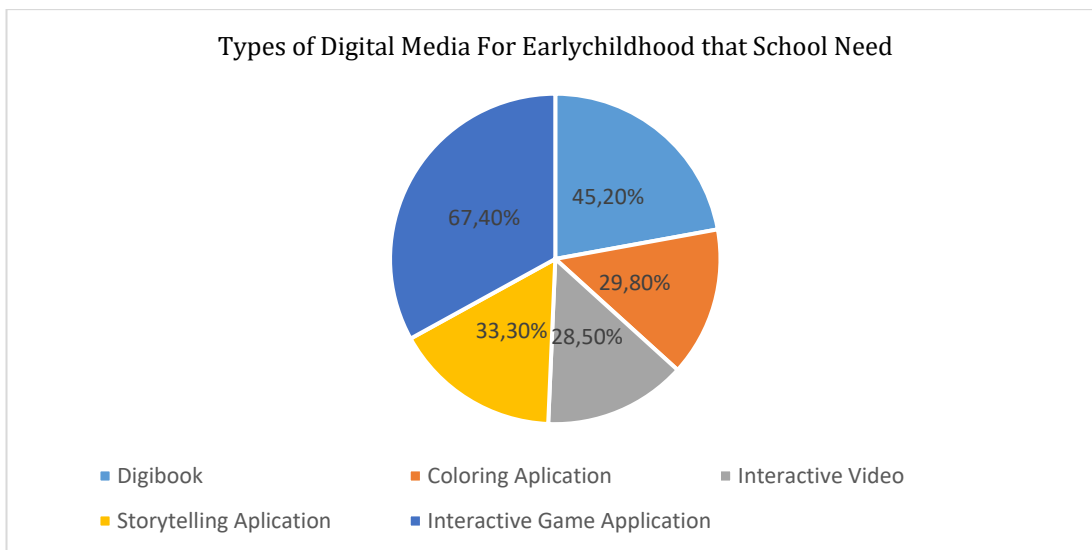


Figure 2. Types of Digital Media for Early Childhood that School Need

The types of digital media for early childhood that schools need are presented as follows. The type of digital media digibook which contains illustrated stories is (45.2%), coloring applications (29.8%), interactive videos (28.5%), storytelling applications (33, 3%) and interactive game applications (a combination of

digibooks, coloring, interactive videos and storytelling) as many as 296 (67.4%). The types of digital media for early childhood that are most needed sequentially are interactive game applications, digibooks, storytelling applications, coloring applications and interactive videos.

Digital media owned by schools for developmental aspects

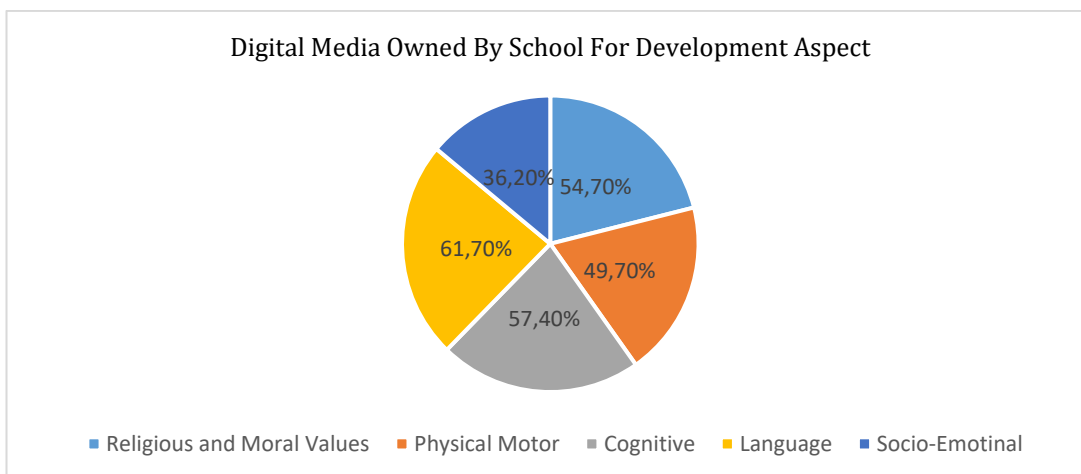


Figure 3. Digital media owned by schools for developmental aspects

Digital media for early childhood owned by the school for every aspect

of development is presented as follows. Aspects of the development of

religious and moral values (54.7%), physical motor (49.7%), cognitive (57.4%), language (61.7%) and socio-emotional (36.2%). The type of digital media for early childhood that is

mostly owned by schools is for aspects of language development, while digital media for early childhood is owned the least for aspects of socio-emotional development.

Digital media that schools need for developmental aspects

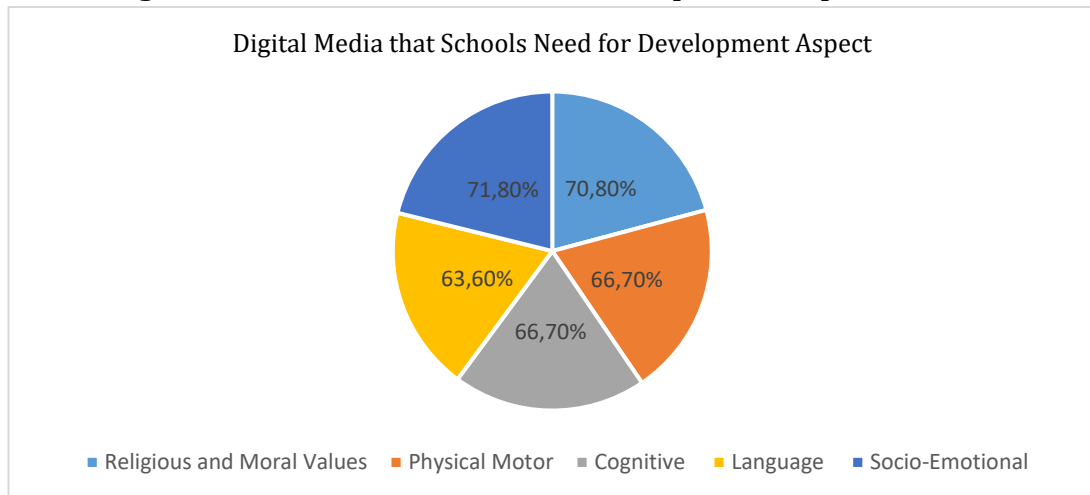


Figure 4. Digital media that schools need for developmental aspects

Digital media for early childhood that schools need for every aspect of development are presented as follows. Aspects of the development of religious and moral values (70.8%), physical much as 315 (71.8%). The type of digital media for early childhood that is most needed by schools for aspects of socio-emotional development, religious and moral values, physical motor, cognitive and language.

effectively and efficiently understand the information they receive. Because of its characteristics as imitators of behavior, educational media can be created as imitation materials for children with what is displayed in educational media (Nawalia et al, 2018).

DISCUSSION

The urgency of developing digital media for early childhood

Educational media for early childhood is called an educational game tool (APE). APE for early childhood can be created in physical or digital form in accordance with the abilities and needs of children's potential development (Heinich et. al. 2002). The purpose of making early childhood education media as a form of educational facilities so that children

The characteristics of early childhood education media (Gandana, 2019) are 1) having communicative value, meaning that the media used can convey messages and of course the message can be easily understood by children, can also stimulate children by playing the media; 2) has practical value, meaning that it is flexible (easy to carry/hold, play and rearrange); 3) has the right target stimulation value, meaning that it must be right on target in providing stimulation to every aspect of child development; 4) has a safety value, meaning that it does not harm the child when playing it and

provides comfort and pleasure for the child as well.

The types of digital media for early childhood are Digibook (Digital Book) containing picture stories; Coloring app; Interactive videos; Storytelling application; An interactive game application that combines digibooks, coloring, interactive videos and storytelling (Nuraina, et al 2018; Gandana, 2019; and Nobre et al, 2019). Based on research data, the type of digital media for early childhood that is mostly owned by schools is interactive video, while the type of digital media for early childhood that is most needed by schools is interactive game applications (a combination of digibooks, coloring, interactive videos and storytelling). Of course, it is urgent for the development of digital media for early childhood, especially digital media needed by schools.

Digital media for developmental aspects

Heinich et al (2002) and Mourlam et al (2019) stated that the use of digital concepts as a vehicle for children's play makes it much more meaningful in the perspective of building insights related to life and is much more efficient in conveying information and facts that tend to be difficult to reach physically. This digital concept can also be more effective in showing objects (enlarging the small, reducing the large, bringing the distant and showing hidden objects).

Along with changes, developments and fulfilling the needs of human life in the era of disruption, the use of digital concepts in early childhood education media has become an important thing to use as a facility to be applied in the world of

education in the era of the industrial revolution 4.0, including in terms of developmental stimulation for early childhood such as religious and moral values, physical motor, cognitive, language and socio-emotional. This condition is seen as important because on the one hand the use of digital media in the future is a human priority (Nieuwazny, 2020). Based on research data, the type of digital media for early childhood that is mostly owned by schools is for aspects of language development, while digital media for early childhood is most needed by schools for aspects of socio-emotional development.

CONCLUSION

Based on the results and discussion of the research, it can be concluded that the type of digital media for early childhood that most schools have is the type of interactive video (53.1%), while the type of digital media for early childhood that is most needed by schools is the type of interactive game application, which is a combination digibooks, coloring, interactive videos and storytelling (67.4%). Most of the digital media owned by schools is for aspects of language development (61.7%), while the digital media most needed by schools is for aspects of socio-emotional development (71.8%). This is of course urgent regarding the development of digital media for early childhood

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