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by Evi Selva

ANALYSIS OF THE NEED FOR DEVELOPMENT OF DIGITAL CALISTUNG GAME LEARNING MEDIA TO IMPROVE COGNITIVE SKILLS AND EARLY LANGUAGE CHILDREN LANGUAGE

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RESUME

This article aims to develop digital calistung game learning media in improving cognitive skills and early language language skills. This research method uses qualitative research with the first stage is identifying problems and literature review, then designing questions as questionnaire guidelines to various sources. Instrument aspect analysis of learning media needs and results of needs analysis of digital calistung game learning media development to improve cognitive skills and language skills of early childhood with a total of 13 responsive teachers in B Paud, CiputatTimursubdistrict, 12 raudhatulathfal, hereinafter abbreviated as RA or equivalent to kindergarten which returning a questionnaire of 10 RA shows that from the analysis of the need for digital calistung game learning media it can be seen that for the dimensions of learning media characteristics (a) its reliability, learning media must be reliable in its use with answers of 62% yes and 38% no. This means that 62% of teachers pay attention to the reliability of the learning media to be developed and only 38% do not pay attention to the reliability of the learning media that will be developed, (b) the making, learning media made by the teacher with 28% answers yes and 72% no. This means that 28% of teachers make learning media consisting of printed media such as books, modules, worksheets, magazines and 72% who do not make learning media. So most teachers do not create or develop media in learning and only 28% of teachers make or develop media in learning. (c) how to use it, the learning media used by the teacher with the answers 44% yes and 56% no. This means that 44% of teachers use media in learning and 56% do not use media in learning. So the majority of teachers do not use media in learning by 56% and only 44% of teachers use media in learning. Based on the description of needs analysis in the field states that the need for digital game learning media to be able to answer the technological era and inevitably learning media has begun to shift to digital technology including learning media.

INTRODUCTION

Play is general and complex. Play is a social activity in childhood and continues for the development of their skills later. The role of adults is providing media and a vehicle for social interaction in childhood.

The role of adults is to facilitate play for all children in the group. This means that adults must develop an atmosphere that is conducive to playing providing appropriate

materials and facilities by guiding the development of children's skills towards improving their development.

With the development of the age it is inevitable that children now enter the millennium called the Z generation, born after 1995 and commonly called digital natives, screenters or Zeds.

According to Prensky in Smaldino, Lowther, and Russell said that students today are the first generation to grow up in the digital world. Cellphones, portable DVD players, computer games, instant messaging, and iPods are everyday devices. Such students are known as digital natives (Smaldino, Sharon E; Lowther, Deborah L; Russell, 2012, p. P.12). The challenge for schools is to create an educational environment that goes beyond and enhances digital capabilities. These advances enable schools to make the transition from traditional to digital environments. These changes will have an impact on the future technology used by teachers and students, the structure of classrooms, and the role of the teacher.

The uniqueness of students must be facilitated by interesting learning patterns, one of which is the game media. Digital game learning media can be developed to answer the technological era and inevitably learning media has begun to shift to digital technology including learning media.

The results of the last five years mention of research conducted by Herwanto concluded that early childhood is more active in learning through calistung media application software (Herwanto, 2012). Sabri, Blanchfield, and Hopkins conclude that Nessy's digital games help reading learning (Sabri, Blanchfield, & Hopkins, 2013). Bavelier and Davidson concluded from their research that people who play video games regularly show little activation of brain regions associated with attention (Bavelier, Daphne; Davidson, 2013). Blumberg and Fisch conclude digital games as a context of cognitive development, learning, and research development (Blumberg, Fran C; Fisch, 2013). The National Association for Education of Young Children recommends that if technology is used appropriately, technology and media can improve children's cognitive and social abilities (aged 0-8 years) (Hernandes, 2014). Martens concluded that children's interaction with the improvement of digital books and e-books can support the development of early literacy and a variety of learning styles (Martens, 2014).

Salmon concluded that it was not only e-books that supported literacy in childhood but also factors related to software quality, interactive features, repeated readings, and adult interactive support (Salmon, 2014). Faroqi and Maula said that interactive multimedia applications containing calistung material with an audio visual display could be used as learning media tools in kindergartens (Faroqi, Adam; Maula, 2014). Putro, Kurniawati, and Angkoso developed the maze game as an android-based basic math education game.

Maze games can help elementary school children in addition, subtraction, multiplication, and division (National & Information, 2014). Sudiyanto, Kurniawati, Hendrawan developed a multiplication house game. Multiplication house games help elementary students with the Java programming language while the chosen implementation medium is an Android smartphone or not (National & Information, 2014). Priantoro, Hendrawan, and Kurniawati developed basic mathematics games about

addition, subtraction, and multiplication. This basic math game helps elementary students especially grades one and two in learning basic mathematics (National & Information, 2014). Shohib developed the design of the game ALENA (AjherNoles Kanak) for learning to read and write based on Android mobile. Alena game for learning to write Latin letters that are inserted Madurese language content. Putro; Kurniawati; and Angkoso in their research implemented a basic mathematics education game integrated into the maze application on an Android-based mobile device

Whereas Busran and Fitriyah conclude an Android-based smartphone education game application can help preschoolers in the early reading process (Busran; Fitriyah, 2015). Kartal and Terziyan with the development of software applications such as games for phonological awareness training at kindergarten level with the aim of helping the acquisition of reading in Turkey (Kartal&Terziyan, 2016). George, Stefan, Stefan, Crinrescu, Beligan, and Cirnu (2017) developed a prototype of a digital education game from the Tingo game that supports language learning especially vocabulary recognition. Duh and Koceska (2017) developed a mobile application called Azbuka, this application was developed with a mobile touch screen device intended to help children learn to write Cyrillic letters and children are motivated to learn to write Cyrillic letters

RESEARCH METHODOLOGY

This research method uses a qualitative approach with the distribution of needs analysis questionnaire to each respondent. This is consistent with what stated by Keirl and Miller in Moleong said that what is meant by qualitative research is a certain tradition in social science that fundamentally depends on human observations both in the region and in its terminology (Moleong., 2014, p. 4) . Thus this method is used to analyze the needs that are being targeted by researchers

The same opinion conveyed by Bogdan and Taylor quoted by Moleong that qualitative methodology as a research procedure that produces descriptive data in the form of written or oral words from people and observable behavior (Moleong, 2014, p. 4). However, Sugiyono's opinion said that this qualitative research method is often called the naturalistic research method because the research is conducted in natural conditions (natural setting) also called the ethnographic method because at first this method was widely used for research in the field of cultural anthropology; referred to as a qualitative method because the data collected and analyzed is more qualitative (Sugiono, 2015, p. 1). According to Strauss and Corbin in (John W. Creswell, 2010: 15) what is meant by qualitative research as research that produces findings that can not be achieved (obtained) using statistical procedures or other ways of quantification (measurement) . According to Yusuf, qualitative research is an inquiry strategy that emphasizes the search for meaning, understanding, concepts, characteristics, symptoms, symbols, and descriptions of a phenomenon; focus and multimetode, natural and holistic; prioritizing quality, using several methods, and presented narratively (Yusuf, 2017, p. 329)

ANALYSIS

Analysis of the needs of digital calistung game learning media to improve cognitive skills and language skills of early childhood.

According to Prensky in Smaldino, Lowther, and Russell said that students today are the first generation to grow up in the digital world. Cellphones, portable DVD players, computer games, instant messaging, and iPods are everyday devices. Such students are known as digital natives (Smaldino, Sharon E; Lowther, Deborah L; Russell, 2012, p. P.12). The challenge for schools is to create an educational environment that goes beyond and enhances digital capabilities. These advances enable schools to make the transition from traditional to digital environments. These changes will have an impact on the future technology used by teachers and students, the structure of classrooms, and the role of the teacher

The uniqueness of students must be facilitated by interesting learning patterns, one of which is the game media. Digital game learning media can be developed to answer the technological era and inevitably learning media has begun to shift to digital technology including learning media

Early childhood education has a very supportive role for child growth and development so teachers must be able to facilitate all the needs of children in achieving growth and development. No exception early childhood education institutions in the province of Banten. From the observation data the researchers collected that PAUD teachers in facilitating students through educational teaching aids still use simple educational teaching aids such as the observations of researchers at RA Melati on Legoso Raya street, Pisangan village, CiputatTimur district, Tanggerang Selatan city, Banten province. Kindergarten teachers still use letter cards to introduce children's early literacy. Even though digital educative visual aids can be used by simply downloading in a number of paid or unpaid official store or play stores. Kindergarten teachers have not shifted to using digital media to answer the challenges of technological development and the shift in learning patterns of millennial age children, known as digital natives meaning the first generation to grow up in the digital world

Instrument aspects of learning media needs analysis include 1) instructional objectives to be achieved with sub-components (a) cognitive, affective and psychomotor, (b) media is individual or classical, (c) learning media must be relevant to students' abilities, (d) instructional media must be relevant to the ability of teachers, 2) characteristics with sub-components (a) reliability, (b) making, use, 3) conformity with sub-components (a) conformity in lesson plans, (b) conformity of targets, (c) suitability of stages the development of students, (d) the suitability of the level of readability, (e) the suitability of the conditions of the place or space needed, (f) the suitability of the objectivity of media selection based on real conditions

The results of the analysis of the need to develop digital calistung game learning media to improve cognitive skills and language skills of early childhood with the number of responsiveness of 13 B group teachers in CiputatTimursubdistrict amounted to 12 raudhatulathfal which henceforth abbreviated RA or equivalent to kindergarten which returns a questionnaire of 10 RA can seen in the table below

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Table 1.1
Percentage of Questionnaire Answers from 13 Teacher Respondents in
RaudhatulAthfalCiputatTimur District, South Tangerang City, Banten Province
Indonesian

Number	Statement	Percentage	
		Yes/have	Never
	Instructional objectives to be achieved Cognitive, affective psychomotor		
1.	Do you consider core competencies and basic competencies in learning	100%	0%
2.	Do you formulate core competencies and basic competencies in learning	92%	8%
3.	Do you understand every formula contained in the core competencies and basic competencies in learning	92%	8%
4.	Do you understand how to map the scope of development with basic competencies in learning Media is individual or classical	85%	15%
5.	Do you consider the development of instructional media on an individual basis?	92%	8%
6.	Do you consider the development of instructional media that is classical	100%	0%
	Learning media must be relevant to the child's ability		
7.	Does the father / mother develop learning media relevant to children's abilities	92%	8%
	Learning media must be relevant to the teacher's ability		
8.	Do you develop learning media relevant to your own abilities?	92%	8%
A.	Characteristics		

	Its reliability		
9.	Have you ever developed a learning media that can be used over and over for a long period of time	62%	38%
	Manufacture		
10.	Have you ever developed silent visual media such as graphic media, printed material, and still images?	46%	54%
11.	Have you ever developed silent projection media such as frame films (slides), film films (filmstrip), and transparency, including the means of each projection coupled with a reflecting projector (opaque projector).	0%	100%
12.	Have you ever developed audio media such as cassettes, vinyl records?	15%	85%
13.	Have you ever developed audio media plus silent visual media such as soundtracks	8%	92%
14.	Have you ever developed a live image media (film) and television or video?	23%	77%
15.	Have you ever developed television media?	15%	85%
16.	Have you ever developed print media such as books, modules, worksheets, magazines	92%	8%
17.	Have you ever developed learning media with learning multimedia such as learning software in the form of CDs or applications in the form of games	23%	77%
	How to use it		
18.	Apakahbapak/ibupernahmenggunakan media pembelajarandalam proses pembelajaran Have you ever used instructional media in the learning process?	77%	23%
19.	Have you ever used visual media in the learning process?	46%	54%
20.	Have you ever used silent projection media in the learning process?	15%	85%
21.	Have you ever used audio media in the learning process?	46%	54%
22.	Have you ever used audio media plus silent visual media in the learning process?	38%	62%
23.	Have you ever used live picture media (film) and television or video in the learning process?	15%	85%
24.	Have you ever used television media?	38%	62%
25.	Have you ever used print media such as books, modules, worksheets, magazines	92%	8%

|			
26.	Have you ever used multimedia learning such as learning software in the form of CDs or applications in the form of games	31%	69%
B.	Suitability		
	Compliance with RPP		
27.	Does the father / mother adjust the decomposition of indicators with learning objectives with KI and KD	85%	15%
28.	Do you formulate the use of operational verbs that can be measured	92%	8%
	Target conformity		
29.	Do you adjust the material to the learning objectives	93%	7%
30.	Did the father / mother arrange the complete contents of the material which was compiled based on KI and KD	92%	8%
31.	Did the father / mother arrange the presentation of learning materials in a sequential and coherent way?	92%	8%
	Appropriate stages of development of students such as language, visual symbols, ways of presentation, and length of time used		
32.	Do you choose the use of grammar, spelling, and sentence according to the age of the student?	100%	0%
33.	Does the father / mother adjust the language used with the development of students	100%	0%
34.	Do you use visual symbols in accordance with the stage of cognitive development of children	92%	8%
35.	Do you pay attention to the length of time used to display learning media	100%	0%
	Appropriate levels of media readability (visual literacy) such as image clarity, color, size, and writing		
36.	Do you pay attention to the clarity of the images in the learning media used	100%	0%
37.	Do you pay attention to the clarity of color in the learning media used	100%	0%
38.	Do you pay attention to the clarity of the measurement in the learning media used	92%	8%
39.	Do you pay attention to the clarity of the writing in the learning media used	85%	15%
	Suitability of the conditions of the place or room needed, ventilation size and room lighting		

40.	Are classrooms able to accommodate children's learning groups	92%	8%
41.	Is there any ventilation in the classroom as air circulation	100%	0%
	The suitability of the objectivity of media selection based on real conditions		
42.	Does digital game-based learning media support to present number recognition	77%	23%
43.	Does the digital game-based learning media support the presentation of numbers	77%	23%
44.	Does digital game based learning media support to present object recognition	69%	31%

From the total questionnaire answers there were 44 statements with 13 teachers as respondents with several aspects being instruments can be seen as a bar chart below.

A. 1. Formulate instructional goals to be achieved in the cognitive, affective, and psychomotor domains as well as individual or classical media with an answer of 94% yes and 6% with no answers. This means that 94% of teachers have formulated instructional goals to be achieved in the development of instructional media and only 6% did not formulate instructional objectives in the development of instructional media.
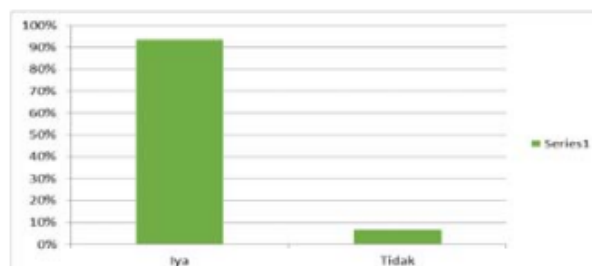
2. Media must be relevant to the ability of children with answers 92% yes and 8% no. This means that 92% of teachers have developed media that must be relevant to children's abilities and only 8% who have not developed media must be relevant to children's abilities.
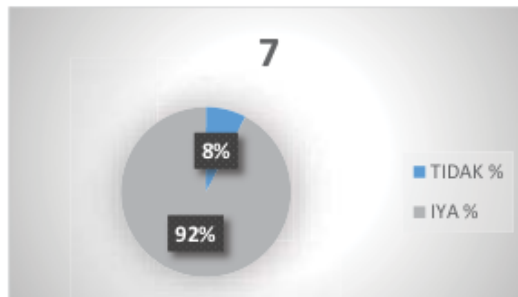
3. Learning media must be relevant to the ability of teachers with answers 92% yes and 8% no. This means that 92% of teachers have developed learning media that must be relevant to the ability of teachers and only 8% who do not develop learning media must be relevant to the ability of teachers.
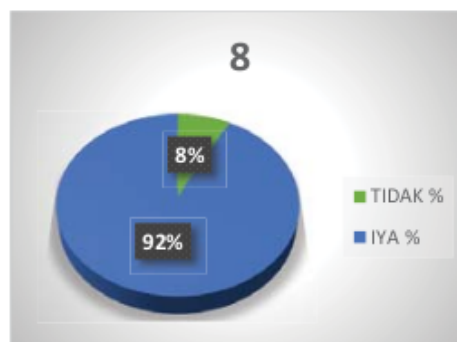
B. Characteristics
1. Reliability.

Learning media must be reliable in its use with answers 62% yes and 38% no. This means that 62% teachers pay attention to the reliability of the learning media to be developed and only 38% do not pay attention to the reliability of the learning media to be developed.
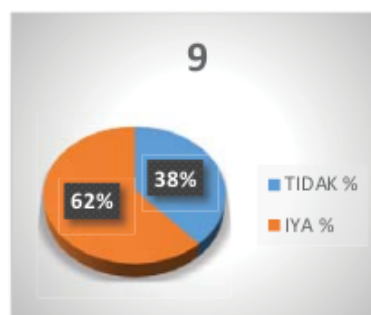
2. Manufacture

Learning media made by teachers with answers 28% yes and 72% no. This means that 28% of teachers make learning media consisting of print media such as books, modules, worksheets, magazines and 72% do not make learning media. So most teachers do not create or develop media in learning and only 28% of teachers make or develop media in learning.
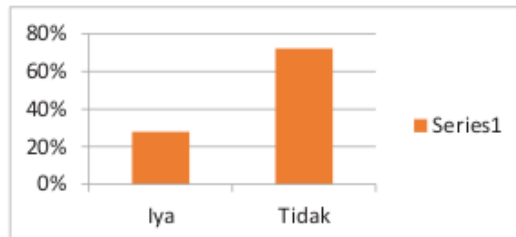

3. Its use

Learning media used by teachers with answers 44% yes and 56% no. This means that 44% of teachers use media in learning and 56% do not use media in learning. So the majority of teachers do not use media in learning by 56% and only 44% of teachers use media in learning.
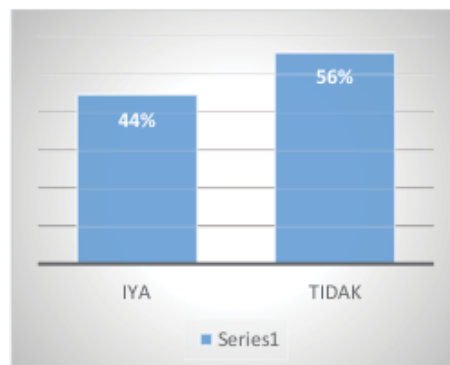
B. Conformity
1. Compliance in the learning implementation plan
The learning media used by the teacher must be a match between the learning media and the learning implementation plan with the answers 88% yes and 12% no. So most teachers already know that there is a match between learning media and learning implementation plans.
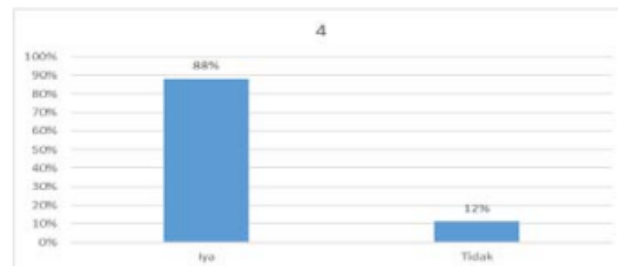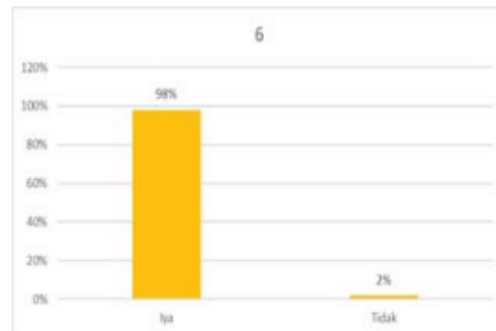

2. Suitability of targets
The learning media used by the teacher must have a match between the learning media and the suitability of the target, the answers are 95% yes and 5% no. So most teachers already know that there is a match between the learning media with the suitability of the target.
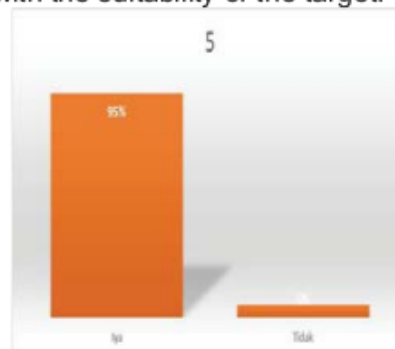

3. Suitability of the stages of development of students
Learning media used by teachers must have a match between learning media with the stages of development of students, answers 98% yes and 2% no. So most teachers already know that there is a match between learning media with the stages of student development.

4. Appropriate level of media readability

   The learning media used by the teacher must have a match between the learning media and the readability level of the media, the answers are 94% yes and 6% no. So most teachers already know that there is a match between learning media and the level of media readability.
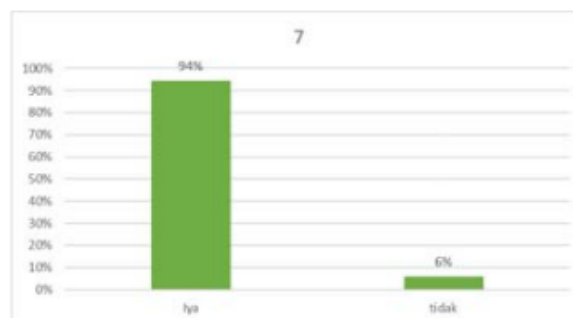

5. Appropriate conditions of the place or room needed

   The learning media used by the teacher must have a match between the learning media and the conditions of the place or space needed, the answers are 96% yes and 4% no. So most teachers already know that there is a match between the learning media with the conditions of the place or space needed.
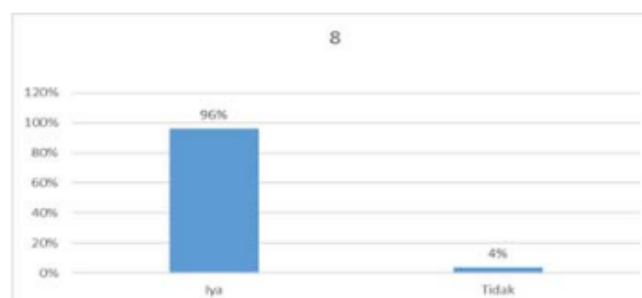
6. Appropriate objectivity of media selection based on real conditions
The learning media used by the teacher must have a match between the learning media with the objectivity of media selection based on real conditions, answers 74% yes and 26% no. So most teachers already know that there is a match between learning media with the objectivity of media selection based on real conditions.
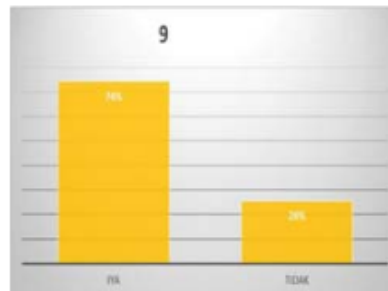
CONCLUSION

The challenge for schools is to create an educational environment that goes beyond and enhances digital capabilities. For this reason, synergy is needed between the teacher as a facilitator for children to answer these challenges so as to maximize the child's growth and development in accordance with their generation.

The uniqueness of students must be facilitated by interesting learning patterns, one of which is the game media. Digital game learning media can be developed to answer the technological era and inevitably learning media has begun to shift to digital technology including learning media.

From the analysis of the need for digital calistung game learning media, it can be seen that for the dimensions of learning media characteristics (1) its reliability, learning media must be reliable in its use with an answer of 62% yes and 38% no. This means that 62% of teachers pay attention to the reliability of the learning media to be developed and only 38% do not pay attention to the reliability of the learning media that will be developed, (2) the making, learning media made by the teacher with 28% answers yes and 72% no. This means that 28% of teachers make learning media consisting of printed media such as books, modules, worksheets, magazines and 72% who do not make learning media. So most teachers do not create or develop media in learning and only 28% of teachers make or develop media in learning. (3) how to use it, the learning media used by the teacher with the answers 44% yes and 56% no. This means that 44% of teachers use media in learning and 56% do not use media in learning. So the majority of teachers do not use media in learning by 56% and only 44% of teachers use media in learning.

Based on the above description and needs analysis in the field states, the need for digital game learning media to be able to answer the technological era and inevitably learning media has begun to shift to digital technology including learning media.

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