The Development of Interactive PowerPoint Game Media (POPOIN) in Jepara District Kindergarten

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Abstract

The issue with online learning is that children must study at home, thus teachers are expected to develop innovative and creative learning so that kindergarten students enjoy it. The objective of this research was to explore the methods involved in developing Interactive PowerPoint Game Media (POPOIN) for children aged 4 to 6 in Jepara Regency kindergartens. The research method was using research and development which was adopted from media development by Sugiyon. The research procedure has ten steps, but this study only uses four: (1) potential problems, (2) finding information, (3) product design, (4) design validation, and data collection techniques such as observation, student questionnaires, and evaluation tests. The sources of data are from teachers and students in Al-Hikmah Kindergarten, Kuwasen Kindergarten, Baitul Makmur Kindergarten, and East Suwawal Kindergarten IV at Jepara Regency. Techniques for collecting data include observation, questionnaires, and documentation. Data analysis used descriptive and qualitative descriptive analysis. The findings showed that media and material experts were validated using proper criteria. The score for the material expert is 80 and for the media, the expert is 83. This means that the development of interactive PowerPoint is suitable for learning of kindergarten in Jepara Regency.

Keywords: Game, Powerpoint, Interactive, Kindergarten

INTRODUCTION

Childhood is a very important stage so the early ages from birth until 6 years are often referred to as The Golden Age. At this stage, they are in a period of rapid growth and development, both physically and mentally (Fithri & Setiawan, 2017). Various research findings conclude that early development has a significant impact on children's development later in life which can increase work productivity, increase children's intelligence potential by up to 80%, and increase physical fitness and endurance in later adulthood (Zaini, 2015; Habibi, 2018). Preschool age is a time for a child to learn to communicate with others and understand them. As a result, for a child to understand various aspects of the world, they must be guided and stimulated (Ahyani, 2012). Cognitive development in early childhood is a very important aspect to be developed. Children with cognitive abilities will be able to explore their surroundings using their five senses, allowing them to use the knowledge they have gained to live and become great people in the future (Susanto, 2020).

Early childhood education is a form of education that focuses on establishing the foundation for physical intelligence, social-emotional intelligence, language, and communication growth and development in accordance with the uniqueness and stages of development that early childhood

experiences (Hasjiandito, Adiarti, & Wantoro, 2016). Thus, early childhood education is very important, as evidenced by the large number of early childhood education institutions established both in cities and in villages (Amini & Suyadi, 2020). This age is the most important moment in a child's growth and development that will affect the child's future (Ulfadhilah & Suyadi, 2021). Education must start early (Dini, 2021). According to Cahyani & Suyadi (2018), children are candidates for the nation's next-generation so early childhood education must be prepared as well as possible so the children can develop according to their capacities.

In the past two years, the COVID-19 (Coronavirus disease) has greatly affected all human activities. The field of education is one of the main highlights that must get a solution in its implementation because education is the basis for the progress of a nation's civilization. Education is part of a key to success. Even in a pandemic, the learning process must continue. If education was going well before the pandemic, then it must continue to go well during the pandemic, even if in different ways and situations (Dini, 2022). The new policy that occurred in the world of education has changed, it was previously done face-to-face at school and shifted to learning from home (Yuliawati, 2021).

Distance learning is considered the same as learning that is carried out directly or face-to-face (Fojtík, 2018). According to the results of observations in kindergartens, online learning at kindergarten institutions in Jepara Regency has decreased in the second month, August 2020. The findings of the study indicate a decrement in parental and student participation in the distance learning process. The online learning process at home makes students tired and bored, especially if the student is under the early age child stage. According to Kustiawan (2018), it is normal for children to feel bored if the learning is not interesting. This is also in line with the nature of early childhood that children are curious and enthusiastic about new things; like to explore; have short concentration power; and are in a golden period for growth and development (Suhendro, 2020). So the educator must be creative, especially for the children, because they like something that attracts their attention as different characteristics of each child make a difference to the child's learning style and the media used (Fitriani, Fajriah, & Rahmita, 2019).

Children's learning styles include visual, auditory, kinesthetic, and combined learners (Priyatna, 2013). The use of learning media is very necessary, especially in a pandemic situation like this to avoid the boredom felt by children during the learning process (Harun et al., 2021). Learning media means connecting between teachers and students in facilitating the learning process, especially in terms of communication (Fitria, 2021), learning media aims to facilitate learning in the classroom, improve learning efficiency, and be able to increase learning concentration (Ah-Sanaky, 2011).

The use of learning aids during the current pandemic is very necessary. Technology-based learning during the pandemic to adapt to online learning. In online learning, the teacher must be able to adjust all learning components, including the methods used during learning, the media used, time management, and the selection of technology used during learning as well as the psychological readiness of the teacher (Satriana et al., 2021). According to Gagne, learning media is one component of the teaching and learning process that has a very important role in supporting the success of the teaching and learning process (Suryani, Basir, & Rusmin, 2018), while according to Pakpahan et al. (2020), to achieve learning objectives better and more perfect.

Online learning requires interactive and fun tools, therefore researchers need to develop interactive PowerPoint to improve the quality of learning for kindergarten children in Jepara. PowerPoint media can make it easier to convey material. Especially with the visuals in PowerPoint, will attract children's attention when playing while learning (Fadillah et al., 2021). PowerPoints can support online learning so that the learning process becomes easier to convey, and learning objectives can also be achieved properly (Sejati, 2020).

CONCEPTUAL FRAMEWORK

The problems that occur during online learning in kindergartens in Jepara are 1) the ability of teachers in online learning is still low so online learning is not optimal, 2) teachers do not use information technology media as a means of delivering learning materials, 3) teachers are less proficiency to use aids in learning 4) students are less enthusiastic and passive in participating in learning, especially in listening to material and information so that children cannot receive the material entirely. 5) lack of facilities and infrastructure that support the online learning process, 6) children's listening and speaking

skills are still limited. From these problems, it is necessary to make tools that can foster student motivation in learning. Making these tools must be creative and innovative that can attract students' attention and make learning fun.

The tool developed is the interactive PowerPoint (POPOIN). In this tool, students are taught to observe numbers and pictures as well as those in PowerPoint. Children are also trained to be more independent, brave, and able to complete each PowerPoint slide. This is in line with what was expressed by Shalikhah, explaining that PowerPoint is software that is easy and often used to create interactive learning aids (Shalikhah, 2016) The feasibility of this tool depends on the teacher who uses it. With the development of PowerPoint media, it is expected that 1) children's activeness in listening and speaking on learning materials will increase, 2) Learning will be more interesting, more lively, and listening and speaking skills on learning materials will run optimally 3) Students get a fun learning experience, 4) students are greatly helped by the POPOIN media.

Research objectives

The purpose of the study was to determine the media needs in online learning. The data is used to describe the steps for developing Interactive PowerPoint (POPOIN) in online learning in kindergarten in Jepara Regency.

METHODOLOGY

Research design

This study uses a research and development approach (Research and Development). Research and Development (R&D) is a research method used to produce certain products and test their effectiveness of these products (Sugiyono, 2013). The research and development procedure refers to Sugiyono's development model consisting of 10 steps which are simplified into 4 steps as follows: 1) problem potential; 2) collect information; 3) product development; 4) design validation.

Data sources and types

The data sources in this study were teachers and children from Al-Hikmah Kindergarten, Kuwasen Kindergarten, Baitul Makmur Kindergarten, and East Suwawal Kindergarten IV in Jepara Regency. There are 8 teachers and 80 students in total. The type of data in this research and development is in the form of qualitative data. Qualitative data were obtained from interviews and observations of product trial observations. Qualitative data were collected through interviews in the form of input, suggestions, and responses based on the assessment of tool experts and material experts.

Data collection

Data collection techniques using interviews conducted with teachers, and children. The interview technique used is a structured interview. Observation is a data collection technique in which researchers make direct observations and systematic recordings of phenomena that are used as objects of observation to obtain the information needed to answer the researcher's problems. The third is a questionnaire in the form of a teacher and child response, and a validation questionnaire for tool experts and linguists.

Research instruments

The research instrument used a questionnaire. Questionnaires were used to collect data with responses and suggestions from expert tests and then revised. The questionnaire contains two parts. The qualitative data collection instrument used a Likert scale with 5 alternative answers. The Likert scale is used to measure a person's attitudes, opinions, and perceptions about certain social phenomena (Sugiyono, 2013).

Data analysis

The data analysis technique uses validation analysis from media experts and material expert validation. Design validation analysis used qualitative descriptive analysis. The results of the validation of material experts and design experts as the basis for the use of tools developed in learning.

FINDINGS AND DISCUSSION

Potential problems

The first step in product development is to map out potential problems. Problem mapping was carried out by conducting observations, and interviews with online learning in several kindergartens in Jepara Regency. The results of learning observations obtained data that during the Covid-19 pandemic, teachers carried out online learning by using the WhatsApp group application in the classroom by giving assignments only. Teachers do not use tools in the learning process such as Zoom Meetings, videos, or PowerPoint media for the learning process (Sofiyati, Suad, & Surachmi, 2021). This is reinforced by the results of interviews with teachers and parents of students who explained that of the 8 teachers interviewed, none of the teachers used media in online learning. Meanwhile, the results of interviews with kindergarten children who were accompanied by their parents also strengthened the results of interviews with teachers.

Incomplete infrastructure, for example, online learning tools. This is the cause of online learning is not optimal. Another cause is the low ability of teachers in the field of information technology so they are not able to create online learning tools. This problem causes children's interest in learning to decrement, and children do not understand the subject so children's learning outcomes are low.

Collect information

The second step in product development is to collect information. 1) Mapping the objectives of product development according to potential problems. The purpose of this media development is to improve the quality of online learning in Kindergarten in Jepara Regency. 2) Seek information about basic competencies and learning activity plans. This activity aims to make product development follow the needs of online learning and can be useful for improving the quality of online learning. 3) Map all the materials that will be made for product development. This material mapping is very important because it is related to the content of the product. The material becomes interesting to the students and the teacher will easily explain the subject matter. 4) Design the right product to be developed to improve the quality of online learning. The product to be developed is interactive PowerPoint media. 5) Collect information about material experts and media experts to help validate the product design that is being developed.
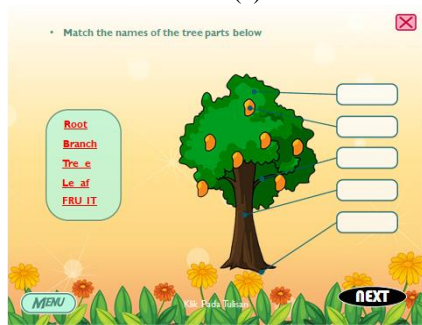
Product Design

The design was developed in Microsoft PowerPoint Game (POPOIN). Microsoft PowerPoint (POPOIN) games as an alternative to ICT tools to facilitate the delivery of material to children. Through these games, the teacher makes it easier to explain the learning material. Microsoft PowerPoint Game development design (POPOIN).
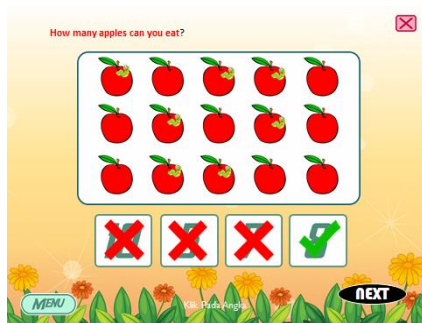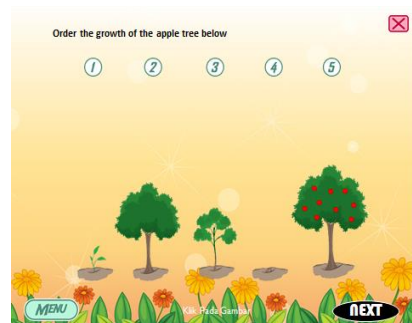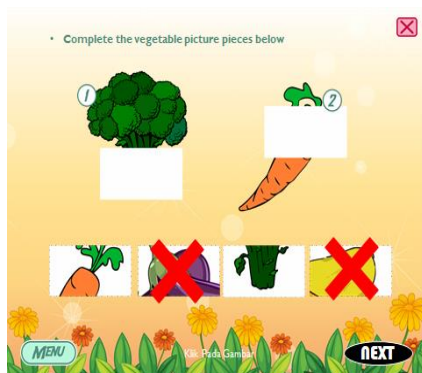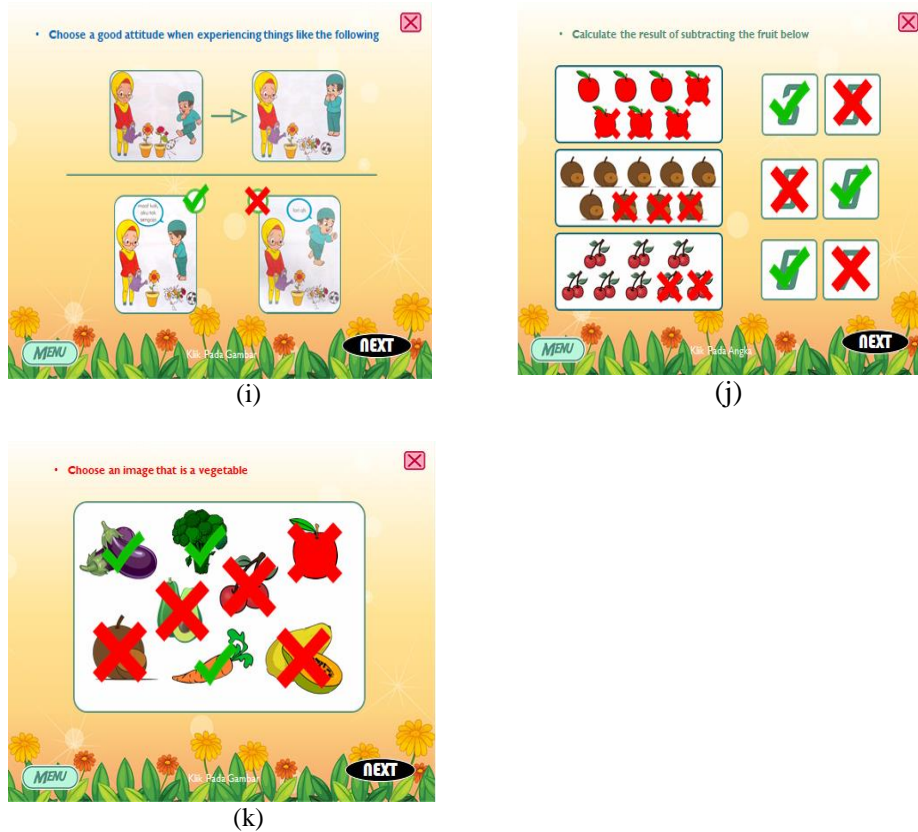
(a)

(b)

(c)

(d)

(e)

(f)

(g)

(h)

(i)

(j)

(k)

Figure 1. (a) Display the initial menu; (b) Material 1; (c) Material 2; (d) Material 3; (e) Material 4; (f) Material 5; (g) Material 6; (h) Material 7; (i) Material 8; (j) Material 9; (k) Material 10

POPOIN is equipped with sound so that students will more easily understand the subject matter. This interactive PowerPoint game has seven themes. In the development of this interactive PowerPoint, it is also uploaded on Youtube so that everyone can take advantage of the interactive PowerPoint with the page https://drive.google.com/drive/folders/1LQvt0GJmrpe8GmyhAlT-WPQpOnBY1Ypu?usp=sharing.

Design Validation

The interactive PowerPoint developed was then validated by media experts and material experts. The results of the validation of media experts and material experts are:

Table 1. Material expert validation results

No	Assessment	Statement			
		1	**2**	**3**	**4**
	ASPECT OF OVERALL VALUE				
1	Creative in expressing ideas in "POPOIN game" is good			√	
2	The design used in the application "Games POPOIN" is interesting for early childhood			√	
3	The menus in the "POPOIN Game" have been arranged neatly			√	
4	The length of the duration of the "POPOIN Game" is under the conditions of early childhood (4-6 years old)				√
	ASPECT OF USE (USABILITY)				
5	The "POPOIN Game" application is easy to run		√		
6	Users can interact with the "POPOIN" game application well			√	
7	The button on "POPOIN Game" works fine				√
8	"POPOIN Game" interface is good and bad boring			√	

	ASPECT OF ACCURACY				
9	The POPOIN game is very light, because each activity theme is only 10 slides, so it's easy to open it			√	
10	The "POPOIN Game" application does not stop when Operation, light and does not require an internet network			√	
11	The "POPOIN Game" application can be run on Android provided that the PowerPoint application is installed.			√	
12	Android does not stop when "POPOIN Game" is operated			√	
	ASPECT OF APPROPRIATENESS				
13	The writing on the "POPOIN Game" can be read well				√
14	The design of the "POPOIN Game" is suitable for early childhood children with a different atmosphere for each theme				√
15	The animation used in the "POPOIN Game" can attract young children			√	
16	The menu presented in the "POPOIN Game" is under the theme of early childhood learning				√
17	The language in giving command sentences in each POPOIN game activity menu is suitable for children			√	
18	The activities displayed in the POPOIN game are varied, and many developments are presented so that children do not get bored				√
19	The activities in the POPOIN game use characters that are suitable for children				√
20	Pictures and characters as well as the contents of the activities in the coin game can be found by children every day				√
	ASPECT OF RELEVANCE				
21	The contents of the "POPOIN Game" are following the material learned in the early childhood curriculum				√
22	The interface in the "POPOIN Game" is relevant to the nuances of early childhood				√
23	"The "POPOIN" game displays cheerful colors according to the theme of learning in early childhood				√
24	The pictures in the "POPOIN Game" match the nuances of early childhood				√
	ASPECT OF OBJECTIVES				
25	"The game POPOIN" has a clear flow of application usage clear		√		
26	The final result of this point game uses an assessment for early childhood, using an interactive assessment instrument with the criteria of BB, MB, BSH, BSB.			√	
27	The level of the child's assessment results is measured by the time the child spends working on the questions			√	
28	There is an instrument that guides parents and educators in providing assessments to children			√	
	ASPECT OF FEEDBACK				
29	"POPOIN game" there is good feedback		√		
30	"POPOIN" have in-game sound effects		√		
31	"The game POPOIN" already indicates success and failure in the game		√		
	Score		10	42	48
	Total score	100			
	Maximum Score	124			
	Validation Value	80.6			
	Category	B (Proper to use)			

The results of the media expert validator's assessment after being averaged were 80.6 with media criteria B or suitable for use. This means that the interactive PowerPoint media development media is feasible to use in online learning of kindergarten in Jepara Regency.

Table 2. Media expert validation results

No	Statement	Assessment			
		1	2	3	4
	ASPECT OF OVERALL VALUE				
1	This POPOIN game is intended to hone various aspects of early childhood development, namely moral religion, language, cognitive, social-emotional, physical motor, and artistic development			√	
2	The material is following the kindergarten curriculum, there are content competencies and basic competencies			√	
3	Creative in expressing ideas in the "POPOIN Game"			√	
4	The design used in the "POPOIN Game" application is interesting for early childhood			√	
5	The menus in the "POPOIN Game" have been arranged and are easy for children to play with neatly			√	
6	Improve children's multiple intelligence				√
	ASPECT OF USABILITY				
7	The "POPOIN Game" application contains easy and fun steps for playing while learning activities			√	
8	Users (especially children) can interact with the " POPOIN" game application well			√	
9	Integrating the value of strengthening character education in early childhood				√
10	"POPOIN games" to facilitate children to develop active, interactive, and communicative thinking skills			√	
	ASPECT OF ACCURACY				
11	This POPOIN game uses the scientific method			√	
12	Instilling cultured education and national character			√	
13	Using thematic learning			√	
14	The content of the material is under STTPA for children aged 4-6 years			√	
	ASPECT OF FITNESS (APPROPRIATENESS)				
15	The POPOIN game material is developed and implemented according to the characteristics of the kindergarten unit			√	
16	This game brings together all development programs				√
17	Connecting previous knowledge already possessed with new knowledge			√	
18	POPOIN games Facilitate kindergarten teachers in developing learning activities according to the concept				√
19	The POPOIN game provides a principled theme of closeness, simplicity, attractiveness, and incidentally			√	
	ASPECT OF RELEVANCE				
20	Child-centered				√
21	Contextual				√
22	Competencies and development of dimensions				√
23	shape personality				√
24	According to the stage of development				√
25	Following children's learning (audio visual)			√	
26	by playing				√
27	improve learning experience				√
	ASPECT OF OBJECTIVES				
28	Well presented POPOIN material			√	
29	The final result of this point game uses an assessment for early childhood, using an interactive assessment instrument with the criteria of BB, MB, BSH, BSB.			√	
30	The level of the child's assessment results is measured by the time the child spends working on the questions			√	
	ASPECT OF OBJECTIVES				
33	"POPOIN Game" is the description of the indicator				√

34	"POPOIN game" is a description of the strategy taken to improve the quality of learning				√
35	"The game POPOIN" already indicates success and failure in the game				√
	Score			57	60
	Total core		117		
	Maximum Score		140		
	Validation Value		83		
	Category		Proper to use		

Table 2 shows that the results of the media expert's assessment for the development of interactive PowerPoint media are 83 with eligible criteria. So, from the two assessors of material experts and media experts, it can be concluded that the interactive PowerPoint media is feasible to use for learning in Jepara Regency kindergarten in terms of material, language, and media aspects.

The results of expert validation showed that interactive PowerPoint media is very much needed for online learning during the current pandemic situation. Online learning during this pandemic is considered very helpful as a solution for educational institutions to continue educating the nation life even after the pandemic hits. In the world of education itself, various communication and presentation applications offer easy access to use such as Zoom Meeting, Google Meet, PowerPoint, Telegram, and WhatsApp. Online learning is often done by sending messages through the WhatsApp application so that the interaction of children with teachers is only limited to the screen. Educators are required to be creative in providing learning in terms of material and delivery, both at face-to-face schools or online schools (Makruf, Suad, & Jakkrapan, 2021). That is why an educator must be creative, especially for the children because they like things that attract their attention. Online learning is considered easy and cheap because it does not require accommodation costs, and parents only pay tuition fees. Online learning makes children become independent because they have to get used to learning on their own from home. But if the school child is still an early age child, they still need more attention from adults in developing the skills they have and not allow to learn independently without direct supervision.

Online learning is currently being carried out following technological advances and developments. So that anyone living in this era must understand or at least know the various media that are developing at this time. Therefore, how important it is to use technology-based learning media during the pandemic to adapt to online learning. In online learning, the teacher must be able to adjust all learning components, including the methods used during learning, the media used, time management, and the selection of technology used during learning as well as the psychological readiness of the teacher (Satriana et al., 2021). Maharani et al. (2020) said that media that supports online learning is needed at this time.

Learning media that can be used by educators for more interesting results is PowerPoint. PowerPoint is part of the Microsoft Office software. The software itself is not just a combination of word processing application programs, worksheets, or presentations but is more complete into a system that interacts and collaborates with web-based services. The use of PowerPoint has many benefits, including; 1) Increasing self-confidence, as we know PowerPoint has various features that help make presentations more interesting and make someone more confident in explaining; 2) Helps design slides to be more attractive, PowerPoint provides the best results with the provided background, animation and design features that can even be added with songs, videos or photos; 3) Make listeners more focused with the information presented (Septiana, 2019).

The use of animation, color combinations, and sound are the main attraction for children. Sukiyasa & Sukoco emphasized that the lessons taught in an attractive visualization containing animations, images, and sound effects would be easier for children to accept and understand during the learning process (Sukiyasa & Sukoco, 2013). This was proven when the researchers started to open PowerPoint, the children were immediately interested and started asking a lot of questions. The children were very enthusiastic when the researcher started to open the PowerPoint. Panjaitan et al. (2020) also said that the use of interesting learning media will motivate children to learn. The advantage of PowerPoint is that it can present learning presentations to be more interesting because they can display images, animations, and sounds simultaneously which can make children happy and not bored.

Wiyani (2014) emphasizes that learning must always prioritize the needs of every child. Hence, children build their knowledge, so adults must help facilitate children's needs. In addition to making children enthusiastic about learning, the use of PowerPoint can make children's learning more meaningful (Putri, 2021). This can be seen from the number of children's questions after the researcher showed the PowerPoint. Even when the explanation on the slide is finished, the child does not want to rush to move to another slide. Even children want to always repeat the audio sound many times. This proves that the use of interesting PowerPoints can help children's memory. With the use of interactive PowerPoints, the quality of learning increases.

CONCLUSIONS AND RECOMMENDATIONS

Based on the results of research on the development of interactive PowerPoint media (POPOIN), it can be concluded that interactive PowerPoints are appropriate to be used to improve the quality of online learning during the pandemic. This is because 1) the use of PowerPoints can arouse children's learning motivation; 2) make children happy and not easily bored; 3) make children enthusiastic and want to know more things; 4) make it easier for children to remember learning because PowerPoint presents a display that combines visual and audio so that the learning process becomes more meaningful.

Interactive PowerPoint development is required on other themes. PowerPoint can also be used for face-to-face learning and at a higher level of education. In addition, to make interactive PowerPoint, teachers must increase their creativity and innovation to improve the quality of learning.

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