Analysis Of The Need For Using Mobile Games To Increase Environmental Awareness For Early Childhood

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Abstract
Based on their basic needs, children can recognize the natural environment (animals, plants, weather, soil, water, rocks, etc.). In addition to increasing knowledge of the natural environment, children are expected to have responsible behavior, appreciation and concern for the surrounding environment so that later they become intelligent people, have positive values and always maintain safety and cleanliness, especially in the village environment. The aims of this study were to obtain: 1) an overview of the use of mobile game media as a means of learning about the environment for early childhood students, 2) views and constraints faced by students in increasing environmental awareness, 3) learning media formulations that need attention that can developed in increasing environmental awareness. The results of the observations were in the form of an instrument for assessing the needs of Early Childhood students which were analyzed descriptively qualitatively. The researcher found that the use of learning media as a learning resource in the process of understanding environmental awareness has been carried out in the field, but has not been implemented optimally.
Keywords: *environmental awareness, needs analysis, mobile game*

INTRODUCTION

Advances Along with the rapid development of information technology, it can be divided into several aspects, one of which is games. Game development occurs very rapidly both online and offline. Game is also one of the information technology industries that has developed very rapidly and has a lot of enthusiasts in the world today. Never saw who the target audience was, because everyone, regardless of age or level of education, didn't really affect game users [1].

In the field of education, computers can be used as a tool in the teaching and learning process for parents, school teachers and children who have functions as tutorial media, teaching aids and also testing tools, each of which has advantages and disadvantages. There are several things that make children less interested in learning because they are less interested and motivated by parents, teachers and their environment. Before introducing children to the use of computers at the Early childhood level, parents and teachers should be able to understand children's development and understand them through their daily lives [1]. Most children quickly feel bored and lazy in conventional learning and prefer playing rather than learning. Learning is not only obtained from formal schools, but can also be obtained from everyday life and the environment.

Based on the results of observations on the learning process in the Independent Curriculum in a number of PAUDs in Bojonegoro Regency, it shows that teachers tend to only use teaching media sourced from the Ministry of National Education in the form of teacher books and student books. It was observed that the books used by students were not entirely sourced from ministry procurement, but sourced from public publishers. After an in-depth analysis of books sourced from these publishers, many of them are not in accordance with current needs. The researcher observed that there were several activity items and questions found in the teacher's and student's books that were not in accordance with the development of thinking only and only emphasized memorizing abilities. Furthermore, observations were also made of a number of teaching materials owned by the teacher. Most of the teaching materials owned by teachers only come from teacher books and student books. The results of interviews with teachers stated that most teachers did not have teaching media other than conventional textbooks in learning. So the teacher fully depends on the learning material from the teacher's book and the student's book. In this regard, training in the development of teaching materials for teachers is necessary. In carrying out teaching media development training activities, it is necessary to know the level of understanding of teachers in designing and understanding the context of teaching materials needed by students in their learning. Teaching media is an important part of learning, because it is a source of learning for children in learning [11]. The teacher's understanding and also the teacher's needs in developing teaching media are important for optimizing the process of implementing the teaching media development training. The level of teacher needs in developing teaching materials is important, because it can be a main idea for teachers to stimulate their needs for developing teaching materials. The development of teaching media is an important part of the teacher's task as a developer of teaching media [12].

Children have unique characters. Both in terms of nature, interest and ability to learn. Everything he sees, hears and feels will settle and build the child's personality structure. The experience he went through will never be erased, but only covered by the next experience. The uniqueness of the world of children results in the need for a learning strategy for children that is also unique, by creating games that are interesting and easy for children to understand. So that it can raise awareness for children to be able to maintain a clean environment. The use of educational games as a learning medium can increase the level of active participation of individuals in solving problems, making decisions, and completing cognitive tasks, which in turn promotes the

development of thinking skills [2]. Learning environments that adopt educational game media as learning tools can be an effective alternative to help build sustainability literacy. [3],[4]. Recognizing the importance of designing educational games for environmental awareness, a needs analysis is needed by collecting information data from the students involved. Needs analysis is the initial stage of a series of Research and Development (R&D) cycles. Analyzing needs before making a design or educational game design, will later be able to produce a prototype that is more effective and of course provides benefits for its users. Based on the explanation above, the researcher intends to express an analysis of the needs of developing educational games to increase environmental awareness for young students.

METHODS

In order to examine the conditions of natural objects, this study employs a qualitative research approach that is based on postpositivism philosophy. Data collection techniques are triangulated, data analysis is qualitative inductive, and research findings place an emphasis on meaning rather than generalization [5]. Data analysis involves thoroughly looking through and gathering information from surveys, interviews, field notes, and other sources so that it may be easily understood and shared with others. This research approach is a descriptive approach, meaning it seeks to learn about real occurrences or circumstances in order to paint a picture or provide a description of what is or is occurring [6]. In contrast, the purpose of this study was to gather data and a general overview of the need for kindergarten-level educational games to raise kids' environmental awareness.

RESULTS AND DISCUSSIONS

In this study, a data collection process was carried out which was carried out in June 2023. A total of 20 kindergarten students became respondents in this study. Data collection was carried out by filling out a questionnaire which was distributed online via the Google Form link, and based on the results of the questionnaire given to students, most of them stated that they needed online games that were more user friendly with easy navigation and had elements of interactivity and design with visual graphics and animations that interesting, has challenges and designed games must be able to increase students' environmental awareness.

In the following, the results of the data analysis of the student needs questionnaire for educational games are presented in detail. In this study, the aspects assessed in the analysis of student needs related to educational games include supporting facilities and infrastructure, access to and use of game media, as well as the educational game format that users want in relation to the scope of material and design. [7][8]. The following describes the results of the analysis of each aspect of the needs analysis. The first aspect to be analyzed in this discussion is data regarding aspects of infrastructure supporting the use of educational games in learning.

Table 1. Supporting Infrastructure

Description Question	Response	%
Have there been available infrastructure that supports learning (such as wifi, laptops, smartphones)?	Yes	98.9
	No	1.1

Based on table 1, out of 20 students, 98.9% of students stated that there are infrastructure facilities that can support the use of educational games, such as Wi-Fi, laptops, smartphones, and tablets. The fact that there are facilities and infrastructure to support game-based learning that have not been maximized indicates that there is a need for educational games in these institutions [7]. Furthermore, an analysis was carried out on aspects of access to games whose detailed and detailed data can be seen in Table 2 below, namely regarding student preferences for the type of game and the device used to access the game.

Table 2. Game access

Description Question	Response	%
What is the type of game that you often play access?	Online game	61.5
	Offline game	38.5
What devices do you often use to access games?	Laptops	6.1
	Smartphone/ tablet	93.9

Students play online games more often, this statement is supported by data in Table 2, namely 61.5% of students access online games. and most students are more comfortable accessing games through their smartphones and tablets/ipads, although there are still 6.1% of students who use laptops to access games. So it is felt necessary to take advantage of the tendency of students to play games online through smartphone or tablet devices. Educational games designed online are able to support learning that increases student involvement and improves learning outcomes. [9]. Analysis of student needs data was then carried out to identify the use of games by students, namely duration, genres that were often played, use of games in learning.

Tabel 3: Use Game

Description Question	Response	%
In one day, how much time do you spend on gaming?	>60 minutes	87.9
	<60 minutes	12.1
	>30 minutes	0
	<30 minutes	0
What game genre what do you play often?	Adventure	61.7
	Puzzle	0
	Simulation	1.05
	Role play	36.2
Does the teacher use game in class every day and is it based on environmental awareness?	Yes	0
	No	100

Based on Table 3, 93.9% of students stated that they often use games, even in one day more than 60 minutes are spent playing. The fact that students spend their time playing games is the reason why researchers are interested in using games as a medium for teaching and learning. The goal is to engage students, spark their interest, and motivate them to learn. By incorporating games into the learning process, students

will be happier and more enthusiastic about learning, making it easier to understand and remember material. [10].

In learning games have been used as learning media, according to 100% of the 20 students who were research respondents. Although several other media are also used by teachers as learning media, 98.5% of students say that the game was not developed specifically by the teacher. So far, learning has only used games that are already available online. Seeing the condition that students' interest in games is high but teachers have not maximally used them to develop games that suit students' learning needs, it is deemed necessary to develop educational games as learning media. related to this potential, further analysis is carried out regarding the educational game format expected by students according to their needs. The format in question includes aspects of material coverage and design. Questions about the material needed to be included in education focused on students' understanding of students' environmental awareness

The results of the student selection show that students like game-based learning-based teaching materials. This is in line with the results of a needs analysis conducted by Waldopo which shows the results that the most preferred formats for students and teachers in their learning media are games and tutorials [13]. The selection of game-based learning-based teaching materials is also supported by the success of various previous studies. Based on the results of research conducted by Ratminingsih it can be seen that learning that utilizes games can make students excited to participate actively and be challenged to be able to understand problems in games [14]. In addition, the research results of Wang, Shang, & Briody show that the use of games and student motivation has a positive and significant relationship [15].

Students can learn a lot by using their surroundings [16]. Lifting information from the environment around students will significantly boost engagement in class and improve learning results [17]. This makes perfect sense because the students will already be familiar with the subject matter, allowing the teacher to focus on guiding and providing direct learning experiences through hands-on and mind-on activities. But achieving these conditions calls for meticulous planning. To ensure that student activities in class are intensely concentrated, this is strongly tied to the instructional materials utilized in the classroom. One of the efforts to steer the teaching and learning process in the classroom so that it meets the overall learning objectives is the development of teaching materials based on the environment of the Barito river. This study's assessment of the caliber of instructional materials is based on Van den Akker and Nieven's views [18]. These instructional materials must be acceptable in the sense that they meet the standards for their classification, practical (simple to use), and effective (goals attained) during the development process. Therefore, it requires enough time to process a teaching resource so that it is actually appropriate for usage.

The analysis and discussion carried out on this game format as a whole shows that each item in this aspect is important and needed in developing online games, specifically students need games that are easier to use with simple navigation and are equipped with interactive elements, visual designs and animations that are easy to use. interesting, contains challenges, and supports imaginative learning. students are interested in using the educational game. In addition, the game must be able to help students achieve learning goals and environmental awareness.

CONCLUSION

Based on the research results, it can be concluded that there are facilities that support the use of educational games and young students need educational games that are more accessible online, with simple navigation and good interactivity. In addition, educational games desired by students must have attractive graphic designs and

animations, have challenges and increase students' environmental awareness. It is hoped that there will be ongoing research regarding the development of environment-based game-based learning teaching materials. Teaching materials developed are expected to be more complete, varied, and more interesting than existing teaching materials. It is also hoped that the teacher will be able to utilize all existing and future teaching materials as well as possible in order to increase student learning motivation.

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