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Development Of Learning Media Based On Gamification With Baamboozle Class 5 Primary School

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ABSTRACT
ABSTRACT The purpose of this research and developm ent is to develop gamification-based learning media with Baambozzle media on the material of calculating the circumference of flat shapes for 5th grade elementary school students. This study uses the 4-D method with four steps, namely: 1) define stage , 2) design stage , 3) develop , 4) disseminate . The place of this research is at SD IT Darul Fikri Patrol. The trial subjects were applied to 30 fifth grade students at the elementary school. Data collection through student response questionnaire sheets. Data analysis techniques using descriptive qualitative to find out students' responses. The product of the development is Gamification-based learning media with Baambozzle Keliling Bangun Datar material. Then the response obtained an average score of 88% or in the very feasible category. Based on the results obtained, it can be concluded that learning media is based on media Baamboozle on the material on the circumference of flat shapes is very suitable for use as a medium Mathematics learning.

Keywords: Gamification, Baamboozle, Mathematics Learning,Flat Buildings, Student Motivation

86 Introduction

Education plays a vital role in developing the character and competencies of the younger generation [1]. However, in elementary education, mathematics—particularly planar geometry—is often seen as difficult and uninteresting by students [2]. This perception leads to decreased motivation and weak conceptual understanding, with many students feeling anxious and avoiding the subject altogether. One contributing factor is the minimal use of innovative learning media and monotonous teaching strategies, which reduce student engagement. Teachers who do not incorporate up-to-date, technology-based tools in their teaching risk making learning experiences less stimulating[3].

In response to this challenge, the use of gamification has emerged as an effective method to increase student participation and enjoyment in learning [4]. Gamification applies game-like elements to educational activities, helping students stay motivated and actively involved. A popular platform that supports this approach is Baamboozle, which offers interactive games and quizzes that foster collaboration and enthusiasm in the classroom. By utilizing Baamboozle, especially for teaching geometry, educators can present abstract concepts in a more engaging and accessible way, making it easier for students to understand and remember the material [5]

The integration of gamification-based learning using Baamboozle is anticipated to positively influence students' motivation in learning. Research suggests that students who engage

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in enjoyable and interactive learning activities tend to achieve better academic results compared to those taught through traditional methods[6]. Additionally, gamification fosters collaboration through group-based games, enabling students to support one another and engage in peer learning. This collaborative aspect is especially crucial at the elementary level, where social interaction plays a key role in students' overall development [7].

Beyond academics, Baamboozle also contributes to shaping students' character by promoting values such as teamwork, sportsmanship, and resilience.Game features like points, levels, and rewards serve as motivational tools that offer immediate feedback, reinforcing student efforts and encouraging persistence [8]. Specifically, in teaching mathematical concepts such as the circumference of flat shapes, Baamboozle allows teachers to assess student comprehension in real time through quiz scores and interaction data. This real-time feedback enables differentiated instruction based on students' individual needs, thereby improving learning outcomes and boosting students' confidence in mathematics[9]. The present study aims to develop such gamified media for fifth-grade students, offering practical insights for educators to enhance learning strategies that are both effective and engaging, while also supporting students' social and emotional growth.

87 Literature Review

a. Learning Media

Learning media help teachers deliver lessons more effectively, especially in primary schools, by making abstract concepts clearer and stimulating student interest. Interactive media, in particular, enhance engagement and improve knowledge retention and participation among students, supporting better learning outcomes[10].

b. Gamification in Learning

Gamification in education involves applying game elements such as points, challenges, and rewards to increase students' motivation and engagement during learning. This approach creates a fun and competitive environment that boosts students' enthusiasm, as it combines competition with rewarding experiences[11]. Furthermore, gamification positively impacts learning outcomes, especially in subjects that are often seen as difficult, like mathematics. When game elements are well implemented, students become more motivated to complete tasks that might otherwise feel monotonous. Thus, gamification is not only a form of entertainment but also an effective pedagogical strategy that supports educational goals.

c. Baamboozle as a Gamified Learning Media

Baamboozle is an interactive quiz-based platform that utilizes gamification principles to facilitate learning. It enables teachers to creatively design quizzes and present them in a fun and competitive format. Baamboozle enhances student participation due to its engaging interface and competitive team-based activities[1]. The platform is easily accessible via simple devices like smartphones and laptops, requiring no special installation.

At the primary school level, Baamboozle is particularly effective because it aligns with students' preference for games and visually appealing content. A study revealed that students are more active and enthusiastic when learning with Baamboozle compared to traditional lecture methods[12]. Teachers also benefit from real-time assessment features, making it easier to evaluate students' understanding. Therefore, Baamboozle stands as a practical and impactful gamified learning medium.

d. Characteristics of Fifth-Grade Elementary Students

Fifth-grade elementary students are typically in Piaget's concrete operational stage of cognitive development. They begin to think logically, but only with concrete, observable objects. Therefore, learning approaches that emphasize visuals and real-life experiences are essential. This study emphasizes that students at this stage benefit greatly from interactive media that combine images and animations to aid conceptual understanding[7].

This developmental need must be addressed through enjoyable and imagination-stimulating teaching strategies. Research conducted by Sari found that upper elementary school students showed greater learning motivation when involved in game-based activities[13].Their confidence improved, and they grasped concepts more easily. Hence, gamified media like Baamboozle must be designed in accordance with the psychological and cognitive characteristics of fifth-grade students.

Table 16: *The Impact of Gamification-Based Learning Media (Baamboozle) on Educational Stakeholders*

Aspects	Benefit	Loss
Student	- Increased motivation and enthusiasm in learning. - Improved engagement and retention in mathematics learning. - Development of logical thinking and collaboration through team-based games. - Positive emotional experiences toward academic content.	- Overreliance on game-based formats may reduce focus on deep conceptual understanding. - Potential distraction if game elements are not well managed.
Teacher	- Easier classroom management due to increased student engagement. - Real-time feedback through quiz-based platforms. - Creative and flexible approach in delivering materials. - Enhanced understanding of student performance through interactive assessments.	- Requires additional preparation time for game content creation. - Teachers may need technical training to effectively utilize digital platforms.
School/Institution	- Promotes a modern and innovative image for the school. - Supports digital literacy among teachers and students. - Encourages active learning and positive school culture. - Potential to improve overall academic performance.	- Need for stable internet and digital infrastructure. - Budget allocation for training and resources. - Potential resistance from traditionalist educators.
Community	- Cultivates tech-savvy, problem-solving young learners. - Encourages community involvement in supporting engaging educational tools. - Builds a generation that views learning as fun and meaningful.	- Misunderstanding of gamification as mere entertainment without educational value. - Possible disparities in technology access across communities.

88 Research Methods

This study is a research and development (R&D) project aimed at producing a learning product that is assessed in terms of validity, practicality, and effectiveness. The research was conducted with fifth-grade students at SD IT Darul Fikri Patrol, Indramayu. The development model used follows the Thiagarajan 4-D framework, which consists of four stages: Define, Design, Develop, and Disseminate [14]. In the define stage, the researcher identifies learning objectives, analyzes

material limitations, and examines the needs of both teachers and students through observation. This step ensures that the learning tools to be developed address the specific educational challenges identified in the classroom.

In the design stage, an interactive quiz-based learning media using Baamboozle was developed, focusing on the topic of calculating the circumference of flat shapes. This phase involved creating an initial design of the Baamboozle interface and preparing relevant quiz questions. The product was then refined in the development stage based on input from media and subject matter experts through a validity assessment. Once revisions were made, the finalized version of the Baamboozle-based learning media was prepared for implementation. In the final dissemination stage, the product was tested on a small and large scale with fifth-grade students to evaluate its effectiveness in enhancing learning outcomes. This comprehensive process ensured that the resulting media was not only educationally sound but also engaging and practical for classroom use.

89 Result and Discussion

The results of this research and development show that the process of developing gamification learning media using Baambozzle on the material on the circumference of flat shapes is carried out through 4-D stages.

Definition Stage

In the definition stage, the researcher conducted a thorough analysis of learning problems, student characteristics, curriculum content, learning objectives, and final tasks. The initial step involved identifying challenges in grade V mathematics learning and seeking appropriate solutions. Observations in the classroom revealed that the curriculum used is the Independent Curriculum, supported by textbooks, student worksheets (LKS), and Baamboozle as the interactive learning media. Analysis of student characteristics showed that most students were passive during lessons, with only a few actively participating. Furthermore, students responded better to material that was concise and structured, indicating the importance of clear and efficient content delivery.

The task analysis focused on the development of material related to the circumference of flat shapes, aligned with specific learning indicators. This analysis helped in determining the success criteria of the developed media. Observations in the classroom revealed that the current learning approach was still conventional—students read the material, listened to explanations, and completed quizzes. This method was considered less effective, as evidenced by the fact that around 70% of students had not met the Minimum Competency Criteria (KKM). These findings emphasized the need for a more engaging and student-centered learning strategy that could enhance motivation and improve understanding.

To address these challenges, the researcher proposed a gamification-based learning approach using Baamboozle. Gamification elements such as points, badges, and leaderboards are known to boost student motivation and involvement [15]. This approach not only makes learning more enjoyable but also helps students grasp complex mathematical concepts more effectively [16]. By integrating gamified learning instruments, the goal is to foster active participation, improve learning outcomes, and create a more inclusive and interactive learning environment, particularly for grade V students at SD IT Darul Fikri Patrol.

Design Stage

1. Baamboozle game content The content developed aligns with the fifth-grade mathematics material on the circumference of flat shapes, covering key concepts such as properties

of shapes and formulas for calculating the perimeter of quadrilaterals and triangles. The questions used in the Baamboozle game are adapted from the Grade 5 math textbooks and adjusted to meet learning indicators and outcomes. To access the media, an internet connection is required. Users can enter the Baamboozle platform with or without an account, as it does not restrict access based on user roles. Students can independently explore learning materials by selecting the "Games" menu and entering the appropriate game code. The platform provides interactive options for reviewing or practicing material, making Baamboozle a practical and engaging tool for mathematics learning.

Development Stage

Field testing was carried out to assess the effectiveness and efficiency of the Baamboozle Game in teaching the material on the circumference of flat shapes, based on student response data. The trials were conducted in two stages: a small-scale trial involving 15 fifth-grade students and a large-scale trial involving all 30 fifth-grade students at SD IT Darul Fikri Patrol, Indramayu. In both trials, students completed questionnaires evaluating the media's effectiveness. Results from the small-scale trial indicated an effectiveness score of 84%, which falls within the "effective" category. Meanwhile, the large-scale trial yielded an even higher effectiveness score of 88%, meeting the criteria for "very effective" media use [17]. These findings demonstrate that the Baamboozle Game is a highly suitable tool for enhancing students' understanding of the circumference of flat shapes.

Distribution Stage

The final stage of 4-D is disseminate or distribution. The disseminate stage is the stage of dissemination and the final stage of this research and development stage. The final stage produces learning media. This development can then be used by educators to be used as learning media that can be applied to students.

The development of this learning media follows the 4-D model, which includes four stages: Define, Design, Develop, and Disseminate. In the Define stage, the researcher analyzes the problems, needs, student characteristics, learning concepts, tasks, and objectives. The Design stage involves selecting the media, determining the format, and creating the initial design. The Develop stage consists of producing the product, validating it with experts, and making necessary revisions. Finally, the Disseminate stage involves distributing the media, allowing it to be used not only as a thesis project but also as a practical learning resource for teachers and students.

The media developed is based on the Baamboozle application, presented as a quiz game designed to be engaging and clear, specifically focused on the material about the circumference of flat shapes for fifth-grade students. This audiovisual media includes pictures and sound to help students better visualize and understand the material. Baamboozle offers an interactive approach by combining game elements with learning, making the lessons more engaging compared to traditional passive methods. The platform enables teachers to present material in a fun and dynamic way, turning often boring topics into exciting challenges or team competitions that enhance students' critical thinking, collaboration, and participation.

Using Baamboozle has been proven to improve students' academic performance and motivation. Students who learn with this media tend to achieve higher test scores than those using conventional methods, indicating that interactive media like Baamboozle makes learning more effective and helps students retain information longer. Additionally, the media positively influences students' attitudes, making subjects like history more appealing and motivating. Overall, Baamboozle has significantly enhanced the learning process and outcomes at SD IT Darul Fikri

Patrol by increasing student engagement, understanding, and enthusiasm, making it a valuable tool for interactive and enjoyable education.

90 Conclusion

The results of the Baamboozle Game product around flat shapes can be stated as valid and effective and can improve student learning outcomes so that the Baamboozle Game product is worthy of use. Research and development were carried out by researchers in accordance with the research objectives that have been set.

A small-scale trial was conducted in class V of SD IT Darul Fikri Patrol, Indramayu Regency with 15 students. Students filled out a response questionnaire regarding the effectiveness of the Game Baamboozle Keliling flat shapes product. Based on table 4, it can be seen that the results of the small-scale trial showed that the effectiveness value of the Game Baamboozle keliling flat shapes reached 84%. This percentage is included in the range of 76% - 100% so that it can be grouped into effective criteria.

A large-scale trial was conducted on all fifth grade students of SD IT Darul Fikri Patrol, Indramayu Regency with a total of 30 students. Students filled out a response questionnaire regarding the effectiveness of the Baamboozle Game product on the circumference of flat shapes. Based on table 5, it can be seen that the results of the large-scale trial show that the effectiveness value of the Baamboozle Game reached 88%. This is in accordance with the interpretation media effectiveness if ÿ 81% then the media can be categorized as very effective (Parni et al., 2019).

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