English Game Website-Based Development for Fifth Grade Elementary School Students in First Semester

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ABSTRACT

Human life has entered the era of the Industrial Revolution 4.0, where technology plays an important role in human life. Likewise, teaching and learning activities are currently being collaborated with technology. However, in practice, many schools still tend to use conventional methods in teaching. Conventional methods This makes students tend to feel bored in participating in learning. Many learning methods have been developed which are considered effective in increasing student enthusiasm for learning. One of the effective, interactive, innovative, and attractive methods for students that can be used is the gamification method. This study aims to develop learning media in digital games for elementary school students learning English. The Design and Development (D&D) methodology and the ADDIE development model were used in this study. The subjects in this study were five fifth-grade elementary school students. Data collection methods in research are observation, interviews, and questionnaires. Furthermore, data analysis was carried out using descriptive qualitative and quantitative descriptive methods. The data obtained are (1) the results of the design and development of learning media using the ADDIE model (analysis, design, development, implementation, and evaluation). (2) results of product effectiveness and validity data from expert judgment, teachers, and users (students). Based on the results of expert judges, website game-based learning English media products are considered very valid as English learning media. Likewise, the English teacher and five fifth-grade students considered games very effective as learning media to increase learning motivation.

Keywords: *Gamification, Era Revolution Industri 4.0, Students' Motivation*

1. INTRODUCTION

1.1. Introduction

Technological developments certainly have a significant impact on human life. Human life has entered the Era of the Industrial Revolution 4.0, where technology has become one of the most important parts of human life. According to Panprase (2018), in this era, humans must be able to work and have creativity, collaboration, communication, and problem-solving skills. n mastering all of these skills, it is possible to reform the education system in Indonesia. Education in the Industrial Revolution 4.0 Era requires students to find new innovations, find solutions, and solve the problems they face (Tangahu et al., 2021). Learning in the 21st century has principles such as interactive, student-centered, and integrative learning, collaboration and communication skills, problem-solving skills, and creative learning (Gunadi et al., 2022). So that in practice, education is always integrated with the use of technology.

Information and Communication Technology, or ICT, aims to develop communicative abilities and student learning autonomy (Lubis, 2018). Technology helps teachers and students to find, communicate, and collaborate on information and knowledge that has been obtained through the use of technology (Hafifah, 2019). Currently, the use of technology in education has become a necessity, one of which is in learning English. Learning English using technology is believed to be more effective and successful for students in receiving learning (Poudel, 2022). Technology makes learning more interactive, collaborative, and exciting and can involve students in learning.

Learning English that collaborates with technology can help students, especially young learners, to receive material quickly. Language teaching is considered easier to teach to children. Children know language knowledge by hearing and following (Hashemi & Azizinezhad, 2020). At the elementary school level, young learners aged 8-12 years are passionate about receiving new knowledge. Children have intuition and self-confidence in participating in learning, so they will be more courageous in expressing opinions (Los, 2020). Children tend to have a great chance to have native pronunciation (Prayatni, 2019). However, at this age, students tend to get bored quickly if the teacher needs help finding interesting learning methods for students. Thus, teachers must have good teaching skills, be creative, be well prepared, and be patient in teaching students (Prayatni, 2019). The ability to motivate students must also be owned by the teacher so that students are enthusiastic about participating in learning (Syafryadin, 2020). Motivation is an important factor that has a role in achieving students' primary goals in their academic life (Christiana, 2009, as cited by Husna & Murtini, 2019; Husna & Murtini, 2019). Likewise, in

language teaching, motivation influences the success and failure of students in participating in learning. Motivation will direct students to repeat or perform a behavior with a reason to achieve a goal (Siregar & Siregar, 2020). Learning English cannot be separated from student motivation. Because if students have motivation, no matter how difficult the material they get, they will continue to try to understand it properly. Shortly, if students feel they need more motivation to give up easily to understand the material.

Based on primary observations at an elementary school in Singaraja City, Buleleng, Bali, several issues were found. First, technology-based learning is still minimal during learning activities. Teachers more often use textbooks as teaching materials for students. Second, students tend to feel afraid and lazy in participating in learning. Based on the interview results with the teacher, this is due to the learning method, which is considered monotonous. As well as students' motivation to learn English still needs to be improved. Students tend to be embarrassed when answering questions because they fear being laughed at by their friends because the pronunciation is still messy. An exciting learning method is needed to increase student motivation in learning.

Gamification is one of the learning methods that can be used in learning English for young learners. Gamification is a phenomenon of learning methods that combine technology and the learning process. (Tan, 2018) argues that gamification is the application of digital games as a learning method and tool to achieve effective learning (Redjeki & Muhajir, 2021). Gamification is believed to increase student motivation, involve students in the learning process, and free students from fear during learning (Tan, 2018). Gamification makes learning more interesting and interactive for students. The elements in games or video games aim to motivate students in learning (Heni, 2016). Several studies have been conducted on how the gamification method influences students' enthusiasm for learning a language. Rahmani (2020) researched the effect of gamification in learning English. This study proves that gamification has a positive influence on student learning. Learning becomes more exciting and meaningful. Furthermore, another study was also conducted by Purnawan et al (2022a) regarding the effects of online quiz gamification on students' vocabulary skills. In this study, online game gamification was considered effective for increasing vocabulary mastery in young students.

Technology-based learning facilitates and motivates students to participate in learning, especially English. This study developed a game-based learning website learning media for fifth-grade elementary school students in semester 1. This research aims to assist teachers and students

in finding interesting learning methods to make learning more enjoyable. The results of the products that have been developed will be helpful for teachers and students in learning activities to develop game-based learning media.

1.2. Research questions

Based on the background above, the formulation of the problem in this study is as follows: How is the process of developing gamification for 5th-grade in 1st-semester elementary school students in learning English? In this study, the focus is on understanding the process of developing gamification specifically designed for 5th-grade students in the first semester of elementary school, with the aim of enhancing their learning of the English language

1.3. Significance of the study

This study aims to make theoretical and practical contributions to English teachers, students, and future research. Theoretically, this research provides additional knowledge and insights regarding the development of gamification for elementary school students in learning English in the 21st-century era. This research is helping English teachers to create innovative and creative learning methods and media. And for the practical significance of this research is expected to improve student's learning motivation through gamification methods, assist teachers in facilitating fun learning by using game-based websites for students, and are expected to be used as a reference to help other researchers in getting additional information for further research on the same topic.

2. METHOD

2.1. Research Design

This research is about the study of developing gamification methods in English learning for 5th-grade elementary school students. The design and Development (D&D) method was used in this research. The Design and Development (D&D) method is a systematic study that includes design, development, and evaluation processes to create a product (Richey R. & Klein, 2007). The Design and Development (D&D) research methodology was used in this research because this research aims to create a product.

Then, for product development, the ADDIE development mode is used. Branch (2009) stated that the ADDIE model is a systematic product development process where the product will be student-centered, innovative, and inspiring. This model is packaged systematically, and the

product developed has five stages that must be passed. The five stages include analysis, designing, developing, implementing, and evaluating.
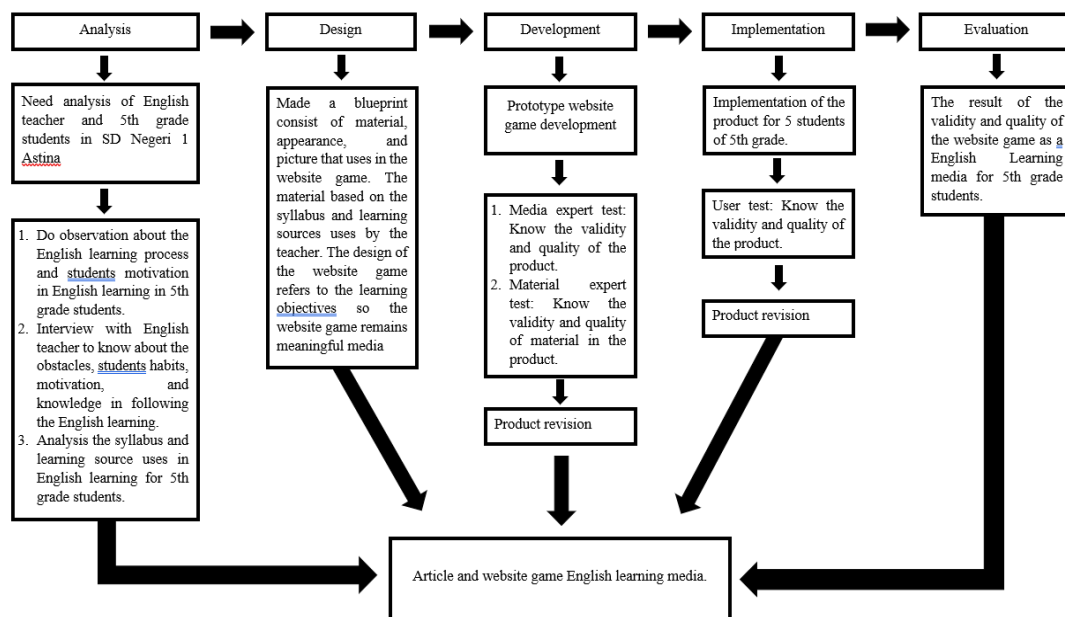
2.2. Samples/Participants

| Analysis | Design | Development | Implementation | Evaluation |

| Need analysis of English teacher and 5th grade students in SD Negeri 1 Astina | Made a blueprint consist of material, appearance, and picture that uses in the website game. The material based on the syllabus and learning sources uses by the teacher. The design of the website game refers to the learning objectives so the website game remains meaningful media | Prototype website game development | Implementation of the product for 5 students of 5th grade. | The result of the validity and quality of the website game as a English Learning media for 5th grade students. |

1. Do observation about the English learning process and students motivation in English learning in 5th grade students.
2. Interview with English teacher to know about the obstacles, students habits, motivation, and knowledge in following the English learning.
3. Analysis the syllabus and learning source uses in English learning for 5th grade students.

1. Media expert test: Know the validity and quality of the product.
2. Material expert test: Know the validity and quality of material in the product.

User test: Know the validity and quality of the product.

Product revision

Product revision

Article and website game English learning media.

Figure 1. Research Development Model Phase

The participant of this study were five students of fifth-grade students in one of the elementary schools in Singaraja City, Buleleng Regency, Bali. While the object of this study was website game-based as the English learning media fot student in fifth grade elementary school.

2.3. Instruments

An instrument is a tool used to collect data. This study used three instruments to collect data, including observation sheets, interview guidelines, and questionnaire methods. First, the observation sheet is used to observe how the implementation and behavior of students participate in learning English activities. The observation sheet contains several checklists that must be filled in regarding how students behave in attending class and how the teacher uses the learning methods. Observations were made in the fifth grade of one of the elementary schools in Singaraja City, Buleleng Regency, Bali.

The two interview guidelines contain questions regarding learning activities at school, the teaching methods provided, and the use of technology in learning. The interview guidelines also contain questions regarding the difficulties of teachers and students in learning activities. The interview was conducted with an English teacher at an elementary school in Singaraja, Buleleng,

Bali. An interview was conducted to find out how teaching and learning activities in schools are based on the views of English teachers.

Furthermore, the third instrument is the questionnaire method. The questionnaire method collects evaluation data for the developed gamification products. Questionnaires were given to two expert judges, an English teacher, and product users (students). The questionnaire contains questions about product performance, such as appearance, speed of operation, appearance, and others. In addition, this evaluation was also carried out to determine the influence of the use of gamification on students.

2.4. Data analysis

This study's data analysis uses qualitative and quantitative descriptive methods. The qualitative descriptive method determines the observation and interview data results. The rating scale for qualitative data can be seen in Table 1:

Score				
5	4	3	2	1
Very suitable	Quite appropirate	Less suitable	Not suitable	Very inappropriate

Table 1. Validity of Questionnaire Scoring Criteria

While the data obtained through questionnaires were accumulated using quantitative methods. Likewise, the data obtained from the qualitative method is accumulated as a score using the quantitative method. The level of validity and effectiveness can be seen in Table 2:

Persentase Criteria	Validity Level & Effectiveness Level Qualification
84 % - 100%	Very valid, can be used without revision & very effective as learning medium
68% - 83%	Valid, can be used without revision & effective as learning medium
52% - 67%	Quite valid, usable but need minor revision & quite effective as a learning medium
36% - 51%	Invalid, not used because it needs major revision & less effective as a learning medium
20% - 35%	Invalid, cannot be used & not effective as a learning medium

Table 2. Validity Level and Effectiveness Level Qualification

3.FINDINGS AND DISCUSSION

3.1. Findings

This study uses the ADDIE development model, which includes analysis, design, development, implementation, and evaluation. The first stage in product development is the

analysis stage. First, the analysis phase begins with the interview stage with the teacher and observations of English learning activities in class V of elementary school. Interviews with English teachers were conducted to find data about the teaching materials used, media and teaching methods in class, how students behave in class, and how technology is used in learning activities. Based on the results of interviews with teachers, conventional learning is still being carried out, and teachers use textbooks more. The use of technology in learning still needs to be improved. Then, from the observations, it was found that some students were still shy and afraid to participate in learning English. This is because students have instilled the thought that English is a difficult lesson, and they are also afraid of being laughed at by their friends because of pronunciation errors. However, some students are still passionate and enthusiastic about participating in learning. A syllabus analysis was also carried out; four topics were in the syllabus for class V, semester 1. These four topics were developed in the form of games and further developed into several types of games.

Second, the design stage is to design the product to be developed. In this stage, the blueprint was created. The blueprint contains an outline of the game's appearance and an explanation of the types of games to be developed. Furthermore, the game questions were also developed based on the syllabus for class V in the first semester. The game contained eight topics, including topic 1 contained two games, "Where's my Match" and "Know Myself"; topic 2 contained two games, "Find my Room" and "Tells the Direction." Furthermore, topic 3 contains two games, "Can you guess, yes/no?" and "Expressing Sympathy," and topic 4 contains two games, "He has a mustache" and "Describe me, please!". Each game has a different type of game, and the level of questions is continuously increasing.

To turn a blueprint into a product, the next step is development. The activities at this stage are looking for images, animations, sounds, and elements suitable for the game. Programmers assist in game development. The product is developed as a website accessed via Personal Computers (PCs) and smartphones. After the development stage, the implementation stage is carried out. Game-based media website products will be tested on a small group. This small group consists of five students of 5th grade from an elementary school in Singaraja City, Buleleng, Bali. They will assess whether the product has been well developed and whether the product can increase students' motivation to learn.

Furthermore, validation of the product was also carried out. Two experts and a teacher carried out the validation process. The last stage is evaluation, and this research used formative

evaluation. The formative evaluation aims to get input and suggestions to revise and validate the product.

Before the product is implemented in English teachers and students, an expert test is conducted to determine the validity of the product. The results of data validity and product effectiveness from two experts can be seen in the Table 2:

Expert	Design Aspect	Content Aspect	Total Score	The Highest Score Total
Expert 1	78	42	120	125
Expert 2	82	40	122	125

Table 3. Expert Judges Validation Result

After getting the calculation results from the expert judges' validation, the calculation is carried out to get the results as a percentage. The percentages obtained in expert judgments are as follows:

Expert	Percentage	Criteria
Expert 1	96%	Very Valid
Expert 2	97,8%	Very Valid

Table 4. Expert Judgements Percentage Result

Based on Table 3, the results show that the assessment of the two experts gives a *"very valid"* criteria to the product being developed. The product has a positive influence on increasing student enthusiasm for learning. Furthermore, an evaluation of English teachers and students was carried out to find out the product's effectiveness. The results of the teacher's questionnaire are shown in the following table:

User	Highest Score	Total Score	Percentage	Criteria
Teacher	125	122	97,8%	Very effective

Table 5.Teacher Evaluation Result

Based on the table above, it was found that the teacher gave a positive assessment of the product being developed. The teacher gives a positive value to the product being developed. The product is tested on students in small groups after carrying out a questionnaire on experts and teachers. The small group used by the researcher was five students in a 5th-grade elementary school. The results of the student evaluation are shown in the following table:

No	Users	Score	Percentage	Qualification
1.	Student 1	68	90,7%	Very Effective
2.	Student 2	69	92%	Very Effective
3.	Student 3	67	89,3%	Very Effective
4.	Student 4	67	89,3%	Very Effective
5.	Student 5	67	89,3%	Very Effective

Table 6. Result of Students' Questionnaire

Based on the results of the student questionnaire, it was concluded that the development of English game-based learning media was considered effective for 5th-grade students. For product evaluation, one student gave a score of 90.7%. Furthermore, two students gave a value of 92%, and the last 3 to 5 students gave a value of 89.3%. So, based on all the percentages given, it can be concluded that game-based English learning media is considered *"very effective"* as a learning medium.

3.2. Discussion

According to Hashemi & Azizinezhad (2020), young learners are considered easy to accept language knowledge, making them an ideal age group to start teaching languages, especially English. Young learners also tend to have good self-confidence when they have mastered something, as highlighted by Al-Dosakee & Ozdamli (2021). Therefore, it is crucial for teachers to create a pleasant learning atmosphere for students, encouraging their self-confidence and engagement in the learning process. Additionally, Santosa (2020) emphasizes that young learners are prone to feeling bored while studying, underscoring the importance of applying innovative learning approaches to maintain their interest and motivation. Overall, recognizing the receptive nature of young learners and implementing innovative strategies can greatly enhance language learning experiences for these students.

The use of technology in learning can help students and teachers find exciting learning methods and combine learning so that it becomes more meaningful (Lubis, 2021). The collaboration technology in learning activities is one of the learning methods considered interactive for students. Currently, technology is something that students commonly use. For students, technology itself is like their "friend" in their daily life (Palkova & Sapozhnikova, 2021). Therefore, using technology-based learning media will benefit students' learning activities.

There have been many developments in technology-based learning media, one of which is digital game-based learning or gamification. Redjeki & Muhajir (2021) stated that gamification

uses game elements in a non-game context to engage students' motivation. Gamification also assists teachers in creating a fun and innovative learning atmosphere for students (Heni, 2016). It allows students to follow the learning process more freely (Kadek et al., 2021).

Gamification has emerged as an effective approach to engage and motivate students in the learning process, with several studies demonstrating the positive impact of technology-based learning media. Purnawan et al. (2022) conducted research using Kahoot! as a learning medium and found significant improvements in students' English skills. Similarly, Inayati & Waloyo (2022) investigated the use of Quizziz and observed that it helped students fully engage in the learning process. These studies provide evidence of how gamification can enhance students' educational experiences.

Building on this, the development of a game-based learning English media website product was assessed by two experts who considered it a "very valid" criterion as a learning medium for 5th-grade students. The media that had been developed received high scores, ranging from 4 to 5, indicating its effectiveness. Following the validation process, the implementation stage involved English teachers and 5th-grade elementary school students. A sample of five students was selected for formative evaluation, which was conducted through a questionnaire using Google Forms. The results from both the teacher and student questionnaires indicated that the game-based learning media received a "very effective" rating for 5th-grade students learning English. This assessment highlights the successful integration of gamification into the learning process, providing an interactive and engaging experience for students. By leveraging game elements and technology, the game-based learning approach transforms traditional classroom settings into dynamic and effective learning environments.

These findings support the utilization of gamification as a means to enhance English language learning among 5th-grade students. The positive outcomes observed in this study emphasize the potential of gamification in fostering student engagement and improving learning outcomes in educational settings. It was concluded that this website-game-based learning media positively influences young learners, especially in learning English. The game-based media website for 5th-grade students helps motivate enthusiasm for learning and actively involve students in learning. Using game-based learning media website products can help students be actively involved in learning.

4. CONCLUSIONS

4.1. Conclusion

This study uses a design and development approach and the ADDIE development model. Product development has five stages: analysis, design, development, implementation, and evaluation. The product produced in this research is a game website based on English learning media. The researcher conducted an expert test with two experts and found that the product developed was considered very valid as a learning medium. The product effectiveness test was conducted with an English teacher and five students. It was also found that the product developed was considered very effective. From the overall results, game website products based on English learning media are considered very effective as learning media for 5th-grade elementary school students.

4.2. Suggestions

Several suggestions can be given related to the development of games-based English learning media website products, First, students can choose and use learning methods and media that are of interest to them. Games can be used as one of the interesting learning media to increase students' enthusiasm for learning. Second, the teacher must be able to create an interesting learning atmosphere for students. Technology-based learning methods can be used as an interesting teaching method for use in learning activities. Third, for other researchers that want be conducting similar research, it is necessary to try the product's effectiveness on a large scale. In addition, the development of learning media products can also be developed at different class levels.

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