Challenges and Factors that Faced By Primary School Teachers in Integrating Gamification Approach

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ABSTRACT

This study was conducted to identify the challenges and factors that hinder primary school teachers from integrating the gamification approach into the teaching and learning process. Gamification is a technology-based pedagogical method capable of enhancing students' motivation, engagement, and interest through a more enjoyable and interactive learning experience. However, its implementation remains limited among primary school teachers. This study employed document analysis and literature review methods to identify key issues related to the integration of gamification in education. The findings reveal that limited ICT skills, inadequate technological infrastructure, insufficient professional training, teachers' heavy workloads, and a preference for traditional teaching methods are among the main barriers. The study also proposes several improvement measures, such as regular training, administrative support, and provision of adequate technological facilities. A clear understanding of these challenges can assist relevant stakeholders in developing more focused interventions to support teachers in effectively implementing gamification approaches in primary schools.

Keywoards: Gamification approach, Challenges, Primary school teachers, effectiveness, Implementing

INTRODUCTION

Education plays an important role in individual development, encompassing intellectual, emotional, social, and moral aspects. It can be, divided into formal, non-formal, and informal education and lasts throughout life. As time progresses, educational approaches have shifted from traditional to modern, becoming more student-centered. 21st-century learning emphasizes skills such as critical thinking, communication, collaboration, and digital literacy.

Malaysia has implemented the Standard Curriculum for Primary Schools (KSSR) and is now planning the School Curriculum 2027, which emphasises seven key competencies, including digital literacy and lifelong learning. In line with the Malaysia Education Development Plan (2013-2025), this change aims to ensure that students are able to compete on a global level (Kementerian Pendidikan Malaysia, 2013). Information and communication technology (ICT) has become a major focus, with significant investments made to strengthen digital education.

Teachers play an important role in educating students in line with current demands. They need to be proficient in using technology and applying modern approaches in the classroom. Technology literacy and the use of digital tools such as tablets and learning applications help improve the quality of teaching and learning. In this context, the gamification approach was chosen as the focus of the study to enhance the effectiveness of game-based teaching and learning. The gamification approach is one branch of game-based learning (Game Based Learning). In the field of education, gamification means knowledge-based games aimed at increasing students' motivation, engagement, and interest through more enjoyable learning experiences. It makes learning activities more engaging, while also achieving learning objectives.

Problem Statement

The gamification approach has become a primary focus for educators. Day by day, it is gaining optimal attention as one of the pedagogical strategies capable of enhancing student motivation and engagement in the

teaching and learning process. Not only that, but this technology-based pedagogical method can also enhance the essence of the teaching delivered by the teacher. Although this pedagogical strategy has many advantages, especially at the primary school level, the integration of gamification approaches in the classroom has not yet been widely implemented. This approach or strategy should be implemented consistently over time to assess its effectiveness on students' learning. Teachers should take the initiative to identify students' weaknesses so that the issues can be addressed. Responsible educators must strive to identify the reasons for students' weaknesses in the subjects they teach and work to improve them. In this situation, most educators have already identified the weaknesses in their teaching techniques or strategies. However, they still do not take the initiative to implement any changes in their execution due to the challenges they will have to face.

According to Habidin, Chik & Muhamad (2021), most students face difficulties in understanding problem-solving skills or techniques in learning. This study shows that, although teachers recognise the potential of gamification as a primary motivator for student interest, its implementation is often hindered by various challenges. Therefore, the researcher intends to examine the real challenges faced by primary school teachers in integrating the gamification approach and the main factors that hinder the implementation of the gamification approach in daily teaching and learning processes. This issue has become one of the important matters that need to be investigated as soon as possible because a clear understanding of the challenges and hindering factors in the implementation of the gamification approach will help various parties to formulate more focused and specialised interventions.

Research Objective

The objective of the study refers to the purpose of conducting a particular research. Through the research objectives, the researcher can identify, understand, and analyse the main issues of the topic being studied. Here are three research objectives provided by the researcher for this study:

1. Identifying the challenges faced by primary school teachers in integrating gamification approaches into the teaching and learning process. Identifying the challenges faced by primary school teachers in integrating the gamification approach into the teaching and learning process.
2. Identifying factors that hinder the implementation of gamification approaches in primary schools. Identifying the factors that hinder the implementation of the gamification approach in primary schools.
3. Analysing steps that can help primary school teachers overcome challenges in implementing the gamification approach.

Research Questions

The research question refers to the main issue to be studied in the research to identify knowledge gaps and guide the researcher in seeking answers for the study through analysis. Here are the research questions for this study.

1. What are the main challenges faced by primary school teachers in integrating gamification approaches into the teaching and learning process? What are the main challenges faced by primary school teachers in integrating gamification approaches into the teaching and learning process?
2. What are the factors that hinder the implementation of gamification approaches in primary schools? What are the factors that hinder the implementation perceptions of the gamification approach influence the challenges and factors that hinder its implementation.
3. What steps can help primary school teachers overcome challenges in implementing gamification approaches? What steps can help primary school teachers overcome challenges in implementing a gamification approach?

TECHNOLOGY ACCEPTANCE MODEL (TAM)

The Technology Acceptance Model was introduced by someone named Davis in 1989 (Davis, 1989). Its purpose is to explain the factors that influence an individual in the effort to adopt new technology. In this theory, there are two main constructs called Perceived Usefulness (PU) and Perceived Ease of Use (PEOU). Perceived Usefulness refers to the belief that the use of technology can enhance work performance, while

Perceived Ease of Use is the belief that the technology is easy to use and does not require significant effort from the user.

In the context of education, this theory is highly relevant to current educational trends that often emphasise teachers integrating technology into the teaching and learning process. It is aligned and significant with the researcher's study title. Where the researcher intends to analyse the level of readiness of teachers and the challenges and obstacles in adopting a technological approach in teaching, namely Gamification. In this context, if teachers believe that gamification brings benefits in increasing student motivation and improving student achievement, then the first construct in this theory is accepted. For the second construct, teachers need to believe that the gamification approach is easy to implement in the classroom. Therefore, the likelihood of teachers accepting and using this approach is higher.

However, if teachers face constraints in integrating the gamification approach, the effectiveness of gamification will be compromised and it will affect their willingness to use it in teaching and learning (Venkatesh & Davis, 2000). Therefore, the Technology Acceptance Model is used as the basis for this study to examine how teacher’s perceptions of the gamification approach influence the challenges and factors that hinder its implementation.

Technology acceptance theory contains several components. The first component, which is the external variable, refers to external factors that pose obstacles and challenges in the implementation of the Gamification approach, such as ICT facilities, student readiness levels, teacher workload, and others. To what extent do teachers find it easy or difficult to use gamification is the perceived ease of use.

Moreover, if teachers see that gamification makes students more focused and motivated, then it is considered useful and referred to as a component of Perceived Usefulness. The fourth component is Attitude, which refers to one's disposition. A teacher's attitude towards the use of gamification in teaching can be either positive or negative (Park & Park, 2020). If the teacher feels happy and has a desire to try, it falls under a positive attitude. Moreover, if the teacher feels afraid or lazy, it falls under a negative attitude. Teachers who have a positive attitude will move on to the next component, which is Behavioural Intention. In the context of the researcher's study, teachers with a high level of desire will be more willing to seek out resources to prepare gamification materials.

The final component in this theory is the Actual Stage, which refers to the Real Action. It refers to the practical use of technology in the classroom. In this study, the Actual Stage is described as the extent to which teachers truly apply the gamification approach in primary schools. Although teachers have the idea of applying gamification, various challenges and obstacles can prevent them from reaching the stage of actual implementation. Therefore, the researcher aims to identify the challenges and obstacles that are the main barriers for primary school teachers in integrating the gamification approach into their teaching and learning.

Advantages Of Gamification Approach

Every approach, technique, or method used in the field of education has its own strengths and advantages. These strengths encompass and are based on current educational trends according to the needs of the students. Therefore, there are many advantages that can be discussed as a result of using the gamification approach.

Enhancing students' cognitive, emotional, and social skills

The use of gamification approaches in the teaching and learning process can help students master their cognitive, emotional, and social aspects. According to Noraini, Zulhana & Nabil (2019), in the cognitive aspect, students think to solve the questions posed at each level until they arrive at the correct answer. This situation will indirectly enhance a student's level of understanding of the topic being asked. When students successfully get the correct answer at the first level, they can proceed to the next level. In addition, this technology-based game will also help students stabilise their emotional levels. In this technological game, students will be tested on their patience while answering questions. Gamification will also enhance the spirit of interacting with one another. Indirectly, students will learn the values of tolerance and respect. In conclusion, the gamification approach not only makes the learning process engaging.

Students are very exposed to the latest technology and communication skills

Through the integration of the gamification approach, students can be exposed to various cutting-edge technologies based on 21st-century skills such as digital literacy. Gamification techniques usually utilise the

latest digital platforms such as Google Docs, Google Forms, Padlet, Google Classroom, and so on. The use of digital applications as mentioned will provide new opportunities for students regarding modern technology that is spreading in the world of education. This is in line with one of the aspirations of students stated in the Malaysia Education Development Plan (PPPM), which is knowledge. Students of the modern era should have a solid understanding of the technology of this modern world so that they do not fall behind. With the introduction of new approaches such as gamification, it helps students cultivate 21st-century skills that encompass critical thinking and digital literacy. Furthermore, a technology-enhanced learning environment will make the learning process more relevant.

Improving the quality of student learning

According to Wook, Zairon, Rahmat, Dahlan & Salleh (2021), there is an improvement in the quality of learning output and positive effects when using the gamification approach compared to the traditional approach. In the context of the classroom, the gamification approach is an effective method for enhancing student learning outcomes. Through recognition, students are encouraged to complete tasks without coercion. The application of gamification techniques in student teaching and learning will undoubtedly have a positive impact on their learning levels. Moreover, the potential to retain information will last longer in a student's memory. Another study states that the gamified learning method using QR codes on game boards has sparked their curiosity and helped them gain a new understanding of the concepts learnt (Bakar, 2024).

Strengthening 21st Century Learning Skills

Drani, Samsudin & Omar (2023), argue that the use of this e-Gamification method can enhance the ability to overcome new challenges. Problem-solving skills are one of the key elements in 21st-century learning. It will encourage students to think critically in order to solve a given challenge or problem. The gamification approach has the potential to make the learning process more enjoyable and meaningful. This is because, indirectly, students are able to enhance their ability to analyse a problem carefully before making a decision.

Challenges In Integrating The Gamification Approach

Lack of knowledge in the implementation of Information and Communication Technology (ICT)

The use of the gamification approach requires an educator to be proficient in using Information and

Communication Technology (ICT). However, there are still among educators who are less knowledgeable in the implementation of ICT (Farouq, Khairani, Yusri & Ariff, 2024). The use of gamification requires an individual to be proficient in using digital applications, software, and so on. However, not all teachers have a strong background in the use of ICT. The lack of training in the use of technology causes teachers to be less capable of integrating gamification elements based on ICT. Furthermore, there are teachers who do not fully understand the concept of ICT in creating gamification. This statement was also mentioned by Angela & Shahlan (2021) in their study. Where trainee teachers are reluctant to use digital games even though they agree that the teaching method has a positive impact.

Teacher centered teaching and learning

Fikri, Amir, Azizi, Haziq, Fauzan & Daerana (2024) state that teacher-centered and traditional teaching methods are still being implemented to this day despite the existence of various facilities such as multimedia teaching aids, interactive multimedia, and so on. Most educators nowadays still follow the teacher-centered teaching approach. The one-way delivery of information in teacher-centered teaching disrupts the implementation of gamification, which requires active student involvement. In this situation, the teacher fully

controls the learning process without giving students the opportunity to explore new things. Situations like this become one of the obstacles for teachers themselves to apply the gamification approach in the classroom.

Inadequacy of training and knowledge

Many teachers have weaknesses in conducting student-centered activities using technological tools (Aliza & Zamri, 2015). Without sufficient exposure and training, teachers certainly lack understanding and do not emphasise the importance of implementing gamification in the classroom. The lack of training and guidance for teachers results in difficulty in understanding this concept comprehensively and subsequently integrating this approach effectively into the teaching and learning process. In the study conducted by Aliza & Zamri (2015), teachers stated that they still require training, guidance, and support to further enhance their knowledge in implementing teaching and learning based on the gamification approach. That statement has proven how important training is for a teacher to master something.

Difficulties In Using The Gamification Approach

According to Angela and Shahlan (2021), 9 out of 15 research articles they examined focused on teachers' difficulties in using gamification in the classroom. One of the main challenges mentioned by teachers is their lack of knowledge and understanding of how to use gamification platforms effectively. This lack of exposure and experience makes them hesitant or even afraid to try using these tools in their teaching. As a result, many choose not to explore gamification, even though it has the potential to make lessons more engaging and interactive for students. In addition, some teachers feel that incorporating gamification into their lessons would take up too much time and effort. They believe that preparing gamified activities requires technical skills that they do not have or are not confident in developing. Because of this, they tend to view gamification as an extra burden rather than a helpful teaching approach. This is especially true for teachers who already have a heavy workload and limited time for lesson planning.

Another factor is the resistance to change. Some teachers are more comfortable using traditional teaching methods that they have been practising for years. They may be unsure about whether gamification can actually improve student learning, or they may fear failure if they try something new and it does not work. This mindset can prevent them from being open to trying innovative approaches like gamification. As a result of these challenges—lack of knowledge, limited skills, time constraints, and reluctance to change—gamification is still

not widely implemented, particularly at the primary school level. Without proper training, support, and encouragement from the school system, many teachers are unlikely to adopt gamification, and its full potential in improving teaching and learning remains untapped.

Factors That Influence The Implementation Of Gamification Approach

Lack of technological insfrastructures in school

Technology infrastructure provides mobile platforms and interactive websites that require fast internet networks and efficient software. Without basic technological infrastructure facilities, it would certainly hinder a teacher from using digital platforms that emphasise a gamification approach. Obstacles such as classroom issues and non-functional technology infrastructure or disruptions in electricity and internet supply become barriers (Angela & Shahlan 2021). Most schools located in rural areas lack technological tools such as computers, laptops, and tablets. If a school is equipped with technological tools as mentioned, the lack of a fast internet connection will hinder the use of digital equipment. This is because gamification requires applications that can often only be accessed through modern digital devices. 42.4% of teachers stated that technological support was Insufficient in the study conducted by (Mee, Shahdan, ismail, Ghani, Pek, Von & Rao, 2020)

Limited teacher knowledge

The lack of skills and limited knowledge of teachers in the context of technology use also serves as a barrier to integrating the gamification approach (Cheong, Filipou & Cheong, 2014). The lack of professional training for

teachers, such as workshops, courses, and specialised training related to gamification, makes teachers less capable of using this technique in daily teaching and learning (Sánchez-Mena & Martí-Parreño, (2017). Many schools do not offer workshops, short courses, or any specialised training to help teachers learn how to apply gamified methods in their teaching (Sánchez-Mena & Martí-Parreño, 2017). This lack of professional development support makes it even more difficult for teachers to learn and experiment with gamification on their own. As a result, many teachers feel unprepared and even anxious about trying something unfamiliar in their classrooms. They may worry about using the wrong tools, not being able to manage the activity. Without guidance or hands-on training, gamification feels too risky or challenging to use regularly.

Time factor in the preparation of teaching materials

The use of gamification in teaching demands more time and effort from teachers compared to traditional teaching methods (Margaret, Maraya & Kandasamy 2024). Thi is because teachers need to design activities that are not only fun and interactive, but also aligned with the learning goals of the lesson. Creating such activities often requires creativity, planning, and digital tools, which can be time-consuming. Unlike traditional methods where textbooks or ready-made materials are used, gamification usually requires teachers to develop their own materials from scratch. This includes preparing questions, challenges, rewards, and visual elements to make the lesson more engaging. For teachers who are already handling a heavy workload, finding time to create these resources can be very challenging. Without proper support or access to pre-designed gamified content, many teachers may feel discouraged from using this approach regularly in the classroom, even if they see its benefits for student engagement and learning.

Lack of Technological resources

The study titled 'Drivers and Barriers to Adopting Gamification: Teacher’s Perspectives' presents several views of higher education lecturers on the use of gamification. One of the identified barriers is activities and the classroom environment pose obstacles to implementing gamification in the country.

Tendency towards traditional teaching methods

The next barrier discussed is that educators are more inclined towards traditional teaching methods that emphasise teacher-centered instruction (Duong & Vo, 2024). University lecturers in Vietnam believe that educators prefer traditional teaching methods over new methods such as gamification. The inclination of educators also serves as a major obstacle in elevating this approach.

High effort to innovate materials

There is a widespread perception that the gamification approach requires significant effort to create the necessary materials (Duong & Vo, 2024). Educators believe that game development requires significant effort and high technical skills. In fact, there is a perception that it requires a lot of resources to create gamification materials. Such perceptions cause teachers to hesitate in trying gamification.

Suggestion For Improvement

Professional guidance and training for teachers

One important step in integrating the gamification approach among primary school teachers is through the implementation of professional training and teacher competency development. This training needs to be systematically planned and focused on the practical aspects of using gamification in teaching and learning (PdP). Stakeholders such as the District Education Office (PPD) or the State Education Department (JPN) should also implement professional learning communities (PLC) to provide space for teachers to share best practices, challenges, and solutions related to the implementation of gamification. With this continuous training, teachers will be more confident and proficient in planning and implementing gamification-based teaching.their the lack of resources in terms of technology, time, and

training (Sánchez & Martí, 2017). This study was conducted in Spain, where lecturers believe that the lack of time to prepare gamified Sufficient technological infrastructure facilities

The provision of adequate technological facilities such as digital devices, stable internet, and user-friendly gamification platforms is crucial to support the integration of gamification in teaching. The lack of infrastructure is the main barrier, so the school authorities and the Ministry of Education need to ensure that teachers have access to appropriate technology. With good support, teachers can implement gamification more effectively and enhance student engagement in learning.

Support from the school administration

Support from school administration and proactive leadership plays an important role in encouraging the implementation of gamification approaches among primary school teachers. Administrators need to provide encouragement and recognition for teachers' initiatives who dare to try innovative teaching methods such as gamification. The school should also establish internal policies that support pedagogical innovation, including allocating time, resources, and training for teachers who wish to implement this approach. With this moral and structural support, teachers will be more motivated and confident to try gamification methods in their teaching and learning. This support not only fosters a culture of innovation at the school level but also contributes to enhancing the quality of teaching, making it more enjoyable and effective for students.

Teachers over workload

The heavy workload and documentation tasks that teachers bear become one of the obstacles in fully

implementing the gamification approach. Nowadays, teachers are often burdened with various administrative tasks, data entry, periodic reports, and documentation that consume time and energy. This situation limits the space for teachers to plan and implement creative teaching methods such as gamification. Therefore, the reduction of their efforts on creating gamification-based teaching materials, conducting interactive activities, and reflectively assessing the effectiveness of these approaches.

CONCLUSION

In conclusion, the integration of gamification approaches among primary school teachers is a highly potential initiative in enhancing student engagement and making the teaching and learning process (PdP) more interactive, enjoyable, and effective. However, its implementation has not yet been widespread and effective due to several identified challenges and obstacles. Therefore, to ensure that the gamification approach can be effectively integrated into the primary education system, several improvement steps need to be taken. Overall, the success of integrating gamification among primary school teachers depends on the readiness of the education system to undergo comprehensive changes and support pedagogical transformation in line with the needs of 21st-century education.

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