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Research Article

Primary Student and Teacher Game Based Learning Engagement: The Problem and the Challenge

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Abstract.

Teacher and student engagement are critical factors that have a significant impact on the learning process. The use of educational games has been shown to make learning more interactive and fun, while also promoting a sense of motivation and engagement among students. This paper aims to investigate the factors that influence student and teacher involvement in game-based learning and how to minimize the potential problem during the classroom intervention. In this preliminary study, we employ a literature review method to find the correlation between teacher and student perspectives in games, and how game-based learning potentially can improve this engagement. Research has found that teacher and student engagement are crucial factors in the learning process and that teachers play a vital role in promoting student engagement. Students who view games as relevant to their learning goals tend to be more engaged and motivated to learn. When teachers view games as a valuable tool for teaching and learning, they are more likely to incorporate them into their instruction and create opportunities for students to use them. This, in turn, leads to increased student engagement, motivation, and learning. Additionally, the use of games in the classroom has the potential to enhance the learning experience for both teachers and students. A key purpose for this review is to provide a framework that teachers might use to construct effective classroom engagement pedagogies.

Keywords: teacher and student engagement, educational game, game-based learning

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1. Introduction

Engagement refers to the level of interaction, participation, and involvement of students and teachers in the learning process and is an important aspect of education. A student who is actively involved in the classroom by asking questions, participating in discussions, and interacting with the topic is said to be engaged. An engaged teacher

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is one who can create a good and inclusive classroom environment, communicate the subject matter effectively, and provide students with help and advice. There are numerous advantages to student and teacher engagement in the classroom. Students that are actively involved in their learning have higher levels of success, motivation, and learning experience satisfaction. Engaged teachers are capable of creating a good and supportive learning environment, which can result in improved student outcomes.

Teachers can employ a variety of tactics to promote both student and teacher engagement in the classroom. These include utilizing a range of teaching approaches, such as group work, hands-on activities, and technology; cultivating a welcoming and inclusive classroom climate; and giving students with continual support and feedback. In addition, teachers must be open to new concepts and techniques and responsive to their students' needs and interests [1].

On the other hand, game are often used to enhance learning. There are many educational games available that are specifically designed to teach specific subjects or skills. These games can be a fun and engaging way for students to learn new concepts [2]. It's common for teachers and students to encounter problems when using technology in the classroom. Some of the most common issues include: (1) Lack of access to devices or internet connectivity: In some cases, schools may not have enough devices for every student to use, or the internet connectivity may not be reliable [3], [4]. Limited teacher knowledge and skills: Teachers may not feel confident using technology in the classroom, or may not be familiar with the specific tools and resources that are available [5]; (3)Distractions and lack of focus: It can be challenging for students to stay focused when using technology, and they may be more prone to distractions such as social media or games [6]; (4) Inequality of access: Some students may have more experience or access to technology outside of the classroom, which can create a divide in the classroom [7].

Other problem with teacher and student engagement with games is that not all students may be motivated by the same types of games. Some students may be more interested in competitive games, while others may be more interested in cooperative games. As a result, it can be difficult for a teacher to find a game that engages all students in the class. Another problem is that some students may have difficulty understanding the rules of the game, which can lead to frustration and a lack of engagement. Additionally, some students may feel discouraged if they are not successful at the game, which can lead to a negative attitude towards learning and a decrease in engagement.

There is also the issue of time constraints. Games can be time-consuming, and it may not always be possible to fit a game into the limited time available for a lesson. This can limit the use of games as a teaching tool. Furthermore, there is the issue of resources. Some games may require specialized equipment or materials, which may not be available in all classrooms. This can limit the use of games as a teaching tool.

2. Problem Statement and Research Question

Regarding the difficulties encountered when using game-based learning in the classroom, we developed a single research question "What factors influence students and teachers engagement in game-based learning interventions? And how to minimize the potential problem?"

3. Methodology

Using Google Scholar, our research intends to examine "student and teacher engagement" and "game-based learning" literacy across a 10-year term, from 2013 to 2023. We discovered 25,000 relevant articles, but just a few fulfilled our research requirements. Because the following round of our research will take place in the Indonesian city of Malang, we selected 15 articles that we felt reflected the educational culture of Indonesia. In addition to this, we include some additional literature from prior years in order to refine the data.

4. Literature Review

4.1. Student- Teacher's Engagement

Student-teacher engagement refers to the extent to which students are actively and meaningfully involved in their own learning process. It is a critical component of student achievement and can be attained in a variety of methods. Effective student-teacher engagement can lead to improved academic performance, increased motivation, and a greater sense of belonging and connection to the learning community [8], [9]. It is important for both students and teachers to be actively engaged in the learning process in order to create a successful and rewarding educational experience [10]. It is crucial to have effective engagement between students and teachers in order to

cultivate a productive learning environment and to ensure certain that students have the experience of being appreciated, encouraged, and motivated to learn. The best way for teachers to enhance student involvement is for them to provide clear goals and expectations, offer students opportunity to have an active role in their own education, and foster a feeling of community and belonging inside the classroom [8]. Teachers are able to cultivate a pleasant and inclusive learning environment that encourages student involvement and academic success when they take the time to develop meaningful relationships with their student body.

4.2. Game-Based Learning

Game based learning (GBL) refers to applying game design elements and game thinking to education, for example, using a competitive game for education [11]. GBL is about changing classroom experiences using game playing as a vehicle for education [12]. Games can be a powerful tool for engaging students in the learning process because they provide a sense of challenge and reward, and can be highly interactive and immersive [13]. Games are often more engaging and enjoyable than traditional learning methods, which can help to keep students motivated and focused [14]. Moreover, games encourage active learning, as students must participate and interact with the material in order to progress [15]. This can help to increase understanding and retention of the content.

However, it is important to ensure that the games being used are well-designed and aligned with learning objectives in order to maximize their effectiveness [16]. There are many different types of games that can be used for educational purposes, including video games, board games, and role-playing games, among others. While game-based learning has been shown to be effective in a variety of educational contexts, there are also some challenges to using games in the classroom, such as the need for specialized equipment and software, the need for properly trained teachers, and concerns about the cost and feasibility of implementation.

5. Findings

The crucial problem with game-based learning is that it may not be suitable for all learners. Some students may struggle with the gameplay or find it unengaging, while

others may become overly focused on winning and neglect the educational aspect of the game [17]. Another potential problem is that game-based learning may not be as effective as more traditional methods for teaching certain subjects or skills. Some research suggests that games may be more effective at teaching certain types of knowledge, such as factual information, but may be less effective at teaching complex concepts or critical thinking skills. Research has shown that student engagement is positively associated with academic achievement and other positive outcomes. Additionally, teacher engagement, which refers to the extent to which teachers are invested in and motivated by their work, has also been found to be positively associated with student engagement and academic achievement [9], [18].

There are many strategies that primary school teachers can use to address these issues, such as providing professional development opportunities for teachers to build their skills, setting clear guidelines for technology use, and finding ways to make technology accessible to all students. Prior research shows there are a few key factors that can influence student engagement with games in the classroom: (1) Relevance: games that are directly related to the content being learned can help students see the value of the material and increase their engagement [19]; (2) Challenge: Games that are appropriately challenging can help keep students motivated and engaged, but games that are too difficult can be frustrating and discourage participation [20]; (3) Choice: Allowing students to choose which games they play can increase their ownership of the learning process and increase engagement [21]; (4) Feedback: Games that provide timely and specific feedback can help students see their progress and improve their learning [22]; (5) Collaboration: Games that allow for collaboration can increase student engagement by promoting social interaction and teamwork .

Other prior research on increasing student and teacher engagement by making their position as game designers, not just students as end-users and teachers as facilitators. We see that an approach to designing games together or co-designing games with students and teachers might be able to contribute to reducing the distance between student and teacher engagement which is increasingly far apart. Students and teachers will work together to determine what kind of game mechanic they need and what interactions can accommodate all groups.

6. Result

There may be logistical issues with using games in the classroom, such as a lack of access to technology or limited time for game play. These types of issues can make it challenging to incorporate games into the classroom on a regular basis. Some strategies for increasing student-teacher engagement include: (1) establishing clear learning objectives and expectations for students; (2) allowing students to participate in hands-on activities and projects; (3) encouraging students to ask questions and participate in discussions; (4) employing a variety of teaching methods, such as lectures, group work, and multimedia presentations; (5) providing feedback and support to help students understand and learn new material; and (6) fostering a positive and inclusive classroom environment.

Moreover, while games can be a useful tool for engaging teachers and students, there are a number of potential challenges that may arise when using them in the classroom. It is important for educators to be aware of these challenges and to work to overcome them in order to make the most of the educational opportunities that games can provide. Educators should carefully consider the suitability of game-based learning for their students and select games that are appropriate for the subject matter and learning goals. Research on teacher and student engagement has typically employed both quantitative and qualitative methods, including surveys, observations, and interviews. Overall, former investigation indicates that teacher and student engagement are crucial factors in the learning process and that teachers play a vital role in promoting student engagement. More research is needed to further understand how to design effective teaching strategies that promote both teacher and student engagement.

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