

Gamifying Education: Teachers and Students Perceptions on Enhancing Motivation and Engagement

Sabeedah Anver Allie*

University of Pretoria, South Africa

Mari van Wyk

University of Pretoria, South Africa

Kimera Moodley

University of Pretoria, South Africa

***Corresponding Author:** sabzvilla@gmail.com

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Abstract

The widespread integration of digital technology in education, accelerated by the COVID-19 pandemic, has led to a shift in student preferences toward online learning. This poses a significant challenge for teachers to maintain student motivation and engagement in traditional classroom settings without risking a decline due to the ingrained reliance on virtual education methods. This study explores the dynamic integration of technology into daily educational practices, specifically through the lens of gamification, with a focus on teachers' and students' perceptions of utilising Book Widgets to augment teaching and learning experiences. Employing a qualitative approach and adopting a case study design, semi-structured interviews were conducted with 10 Grade 5 students from a girls-only private primary school in Saudi Arabia. Simultaneously, online questionnaires were distributed to teachers in Saudi Arabia using Book Widgets, through convenience and voluntary sampling. Thematic analysis, facilitated by the Atlas-ti Software, was employed to derive meaningful insights from the collected data. The research highlights the effectiveness of Book Widgets in boosting both intrinsic and extrinsic motivation among students, prompting teachers to strategically use Book Widgets as a tool for increased engagement and participation, particularly in primary school settings. Establishing Book Widgets as a valuable instrument for fostering motivation and engagement, the implications for optimising integration into educational practices to enhance student involvement further, are evident.

INTRODUCTION

In the contemporary setting of education, the pervasive influence of digital technology has become a transformative force in the teaching and learning process. The primary challenge faced by teachers, particularly exacerbated by the COVID-19 pandemic, is the diminished motivation and engagement of students in learning activities. Initially, many schools transitioned to online learning platforms during the pandemic. However, the adaptation to virtual learning has now ingrained a preference for online education among learners (Bignoux & Sund, 2018). Consequently, reverting to traditional rote learning methods upon the return to physical classrooms may lead to a decline in student motivation and engagement (Su & Cheng, 2015) in certain aspects of learning. While student engagement is closely related to student learning outcomes (Subramanian & Mahmoud, 2020), traditional teaching methods fail to motivate and engage students in the classroom (Puspitarini & Hanif, 2019). Therefore, teachers and researchers look for ways to engage and motivate students.

In recent years, there has been an increasing interest in integrating technology into educational settings to enhance teaching and learning outcomes (Koivisto & Hamari, 2019). Gamified experiences have emerged prominently in the education environment through the integration of gamification elements in teaching and learning (Kapp, 2012; Wright, 2023). Integrating technology and gamified experiences in teaching and learning increases efficiency, motivation, and learner engagement which

leads to successful learning (Simões et al., 2013). Tools such as Blooket, Baamboozle (Kharbach, 2023), Classcraft and Book Widgets (Daily, 2020) are often used to gamify learning content. For example, Book Widgets provides a diverse array of interactive and captivating educational materials (Kapp, 2012), while Baamboozle is an online, game-based learning platform that delivers accessible and enjoyable interactivity for the classroom (Edwards, 2022). Nevertheless, the interactive and game-like attributes of Book Widgets are particularly appealing to students, enhancing motivation and engagement in the learning process (Kanazawa, 2024).

By incorporating elements of competition, rewards, and achievements, Book Widgets creates a sense of excitement and challenge, encouraging students to actively participate and strive for improvement (Su & Cheng, 2015). On the other hand, teachers play a crucial role in implementing and utilising Book Widgets as a gamification tool (Mirzoyan, 2021) and their perceptions provide valuable insights into the effectiveness of this tool. Thus, this article investigates the perceptions of both teachers and students in utilising Book Widgets as a gamification tool to enhance motivation and engagement in teaching and learning.

LITERATURE REVIEW

Gamification education, defined by Kapp (2012), utilises game-based mechanics and approaches to captivate individuals, motivate actions, and enhance learning with the primary goal of making the learning process more motivating. The incorporation of gamified methods involves the use of game-like elements that stimulate learners' motivation and engagement in education, drawing parallels to gamers' enthusiasm (Wong et al., 2020). This approach establishes an optimal learning environment, fostering the acquisition of higher-order knowledge through challenging trial-and-error experiences (Wu et al., 2012). Furthermore, integrating games into education not only adds engagement to the learning process but also deepens understanding of the subject matter (Chow et al., 2011). The strategic use of various gamification elements, such as rewards, challenges, points, badges, and leaderboards has been shown to motivate and engage students in classrooms, as supported by numerous studies affirming gamification's substantial motivational potential (Garris et al., 2002; Gee, 2007; Hense & Mandl, 2014; Przybylski et al., 2010; Rigby & Ryan, 2011; Ryan et al., 2006; Yee, 2006), categorising motivation into extrinsic and intrinsic forms.

Extrinsic motivation is influenced by external rewards, whereas intrinsic motivation is associated with inherently enjoyable activities (Ryan & Deci, 2000). Extrinsic motivation often involves operant conditioning, where external stimuli influence the likelihood of task completion. Conversely, intrinsic motivation centres around finding fulfilment in the activity itself rather than seeking external outcomes (Navarro et al., 2022). The concept of engagement in education goes beyond mere compliance with attendance and completion of assignments; it reflects a genuine connection and enthusiasm for learning (Fredricks et al., 2004). Engaged students are typically more motivated, interested, and invested in their studies, leading to improved academic performance and a positive learning experience (Appleton et al., 2008).

To assess the effectiveness of gamification, it becomes crucial to explore the perceptions of both teachers and students. Understanding how they interpret, understand, and become aware of gamified learning environments shapes their overall perception (Ortega-Arranz et al., 2019). This mental process of receiving, organising, and interpreting information within a learning environment is vital for teachers to tailor their approaches to the preferences and needs of students.

Advocating for the integration of gamification into lessons requires a nuanced understanding of teachers' perceptions. According to Alabbasi (2017), teachers' attitudes toward gamification elements play a pivotal role in determining their successful implementation. While some studies indicate that teachers are familiar with gamification (Hanifah et al., 2021), others suggest that most teachers perceive it as learning through educational games (Lehman et al., 2020; Yaşar et al., 2020). Despite this ambiguity, teachers report using gamification elements such as badges and leaderboards to enhance student motivation, engagement, performance, and positive behaviour (Yaşar et al., 2020).

Many teachers express a positive attitude toward gamification, believing it can be useful in improving student motivation, engagement, interest, and performance (Başal & Kaynak, 2019). Recognising its potential to develop competencies, such as teamwork, self-regulated learning, critical thinking, oral communication, participation, and social skills, teachers also acknowledge concerns that gamification may make classroom management more challenging (Sánchez-Mena & Martí-Parreño 2017). Despite these challenges, the effective incorporation of gamification elements into teaching can result in substantial benefits for students (Ar Rashid, 2023).

Inspiring a shift away from traditional teaching methods and promoting an interactive learning approach (Robinson, 2020), online learning with gamification has received favourable perceptions from students. Robinson (2020) posits that students perceive gamification as a valuable strategy for maintaining focus and attention, driven by motivating reward systems. Similarly, the study conducted by Sunarti et al. (2022) indicates a substantial number of students perceive gamification as a motivating factor, enhancing their interest and engagement in the learning process and creating a more favourable learning environment. The survey findings from Sunarti et al. (2022) demonstrate these students' favourable perception of gamification, emphasising its essential role in education due to its user-friendly, motivating, engaging, and efficient nature. Consequently, these students strongly advocate for teachers to incorporate gamification elements into their lessons. Nevin et al. (2014) further supports this positive student acceptance of gamification, highlighting its beneficial impact on knowledge retention. Additionally, Woo (2014) reveals that gamification contributes positively to students' motivation, cognitive abilities, and overall performance. One such gamified platform is the Book Widgets application which has been recognised as an effective way to support teaching and learning since it allows teachers to create interactive activities for their students.

Book Widgets includes several features, such as quizzes, timelines, bingo games, hangman, flashcards, and maths features such as spreadsheets and charts, as well as the capability to collaborate with images and videos, making it well suited to teaching Math, Science, English, Social Studies, Art, and other subjects (Tronçon, 2023). For example, Math teachers may engage students with interactive exercises involving formula entry and chart plotting, while also practicing basic arithmetic. Book Widget's tools are valuable for geography and social studies teachers, enabling the creation and interpretation of maps. Science teachers can utilise the platform to illustrate life cycles, photosynthesis processes, or organism evolution. In English language teaching, visual materials can complement texts, prompting students to analyse thematic conveyance through diverse media types (TeachThought Staff, 2021). With this platform, paper worksheets and assignments can be transformed into interactive quizzes and assignments that are rich in multimedia (Burns, 2021). Widgets are potential game-changers in the educational industry, and by using Book Widgets it will enhance the value of eBooks and add a new dimension to their interactive capabilities (Kotobee, 2016).

To implement gamification, elements such as points, scoring, badges, and leaderboards could be incorporated into the existing curriculum (Wang et al., 2022), enhancing the learning process. The strategic integration of gamification elements into the teaching and learning process holds immense significance, fostering increased motivation and interest among students. Consequently, students are more likely to actively engage with the subject content, resulting in higher levels of concentration and enjoyment of the activity (Furdu et al., 2017; Landers et al., 2017). This incorporation of gamification elements in education, as highlighted by Ghavifekr et al. (2016), Tan and Tan (2020), and Wang et al. (2022), not only elevates students' motivation and engagement, it also contributes to an overall improvement in the learning experience.

The gamification taxonomy developed by Toda, Oliveira et al. (2019) was employed to assess the gamification elements present in Book Widgets. The gamification taxonomy framework (Toda, Oliveira et al., 2019) describes key dimensions in which gamification takes place. Based on the gamification taxonomy framework, the gamification elements present in Book Widgets were identified and categorised. By applying this method, it was possible to perform a structured and systematic analysis

of the gamification elements within the application, providing valuable insight into how gamification elements could be utilised to enhance user motivation and engagement within Book Widgets.

The **ecological dimension** includes elements such as chance, imposed choice, economy, rarity (Dignan, 2011), and time pressure, contributing to the dynamic nature of the environment (Toda, Oliveira et al., 2019). Gamification elements, such as competition, cooperation, reputation, and social pressure, form the **social dimension** and enhance the social interaction among students. (Toda, Oliveira et al., 2019). Toda, Oliveira et al. (2019) highlight elements such as novelty, objective, puzzle, renovation, and sensation within the **personal dimension**, addressing individual preferences and motivations. The **fictional dimension** engages users through narrative and storytelling (Toda, Oliveira et al., 2019), stimulating intrinsic motivation (Toledo Palomino et al., 2019). Feedback on progress and level is offered by the **performance dimension** through elements such as acknowledgment, level, progression, points, and stats (Toda, Oliveira et al., 2019). These are manifested in mechanisms like progress bars and feedback within the Book Widgets application.

METHODS

To acquire comprehensive information, a qualitative approach was utilised alongside a case study design to collect data and provide valuable insights into the potential of gamification in enhancing student learning. By employing this approach, the researchers were able to gain a deep understanding of the participants' lived experiences and perceptions (Merriam, 2009).

To gather data, semi-structured interviews were conducted with 10 female Grade 5 students from a private school in Riyadh, Saudi Arabia, using a non-probability sampling method, specifically purposive sampling. Online questionnaires were administered to 13 teachers from various schools in Saudi Arabia through convenience and voluntary sampling. During the data collection, open-ended and probing questions were utilised to elicit comprehensive responses from the participants (Adams, 2015). This approach enabled the researchers to gather factual and primary information regarding the impact of Book Widgets on teaching and learning. The sample size was deemed adequate to demonstrate the integration of gamification elements into the classroom setting using the Book Widgets application.

The ethical considerations in this research included obtaining informed consent, ensuring confidentiality, promoting voluntary participation, and safeguarding participant well-being. Adhering to guidelines from the University of Pretoria and the Protection of Personal Information (POPI) Act, the study also acquired prior permission from the school to involve student participants. For underage students, parental consent and student assent were obtained, while teachers expressed consent by participating in the online questionnaire.

FINDINGS

In this study, the perceptions of both teachers and students on the use of the Book Widgets application were examined as a gamification tool to enhance motivation and engagement in the classroom. Using the gamification taxonomy as a structuring principle, the data was coded according to the five dimensions of the gamification taxonomy. Throughout the study, elements are viewed as subsets of broader dimensions within the gamification taxonomy. Quotes from participants and respondents are used to support the researchers' interpretation of the data relative to the elements and dimensions in which they are classified. To facilitate the reporting of this article, students' responses will be reported using pseudonyms (participants 1-10), and teachers' responses will be reported as anonymous (respondents 1-13). To facilitate easy reading, elements will be highlighted in bold and italics.

Ecological Dimension

In the ecological dimension, elements of **chance** became evident as students occasionally received *bonus points* unexpectedly. Teachers also valued these *bonus points* as a **motivating** factor, with respondent 4 noting that the students experienced "*joy and motivation*" while **engaging** in the

task, reflecting positive emotions that contributed to their active **engagement** with the goal of earning bonus points. Respondent 9 stated that *"Students stayed motivated and focused after earning bonus points."* The experience of students was one of increased determination and effort, as they continuously strove to accumulate these extra points, as mentioned by Participant 5: *"...I feel excited to play games on Book Widgets to learn more and get higher points"*, highlighting the profound impact of *bonus points* in enhancing **motivation** and **engagement** in student learning.

In the context of the ecological dimension, the multifaceted role of **time pressure** became evident, with Participant 3 highlighting how it served as a **motivating** factor, stating, *"I am motivated to complete the task because I want to be on time."* This perspective reflects how students often perceive deadlines as extrinsically **motivating** factors. On the other hand, Participant 2 shared a contrasting sentiment, saying, *"If I do not finish on time, I feel sad and defeated"*, indicating that time constraints could also lead to demotivation. However, from the teacher's perception, time pressure played a crucial role in instilling time management skills in students, as Respondent 6 mentioned, *"Time management is an important skill, and Book Widgets help students improve this skill."* This perspective underscores the educational value of time constraints in teaching students the essential skill of managing their time effectively.

Social Dimension

Competition emerged as a powerful **motivator** for students, when Respondent 2 noted that, when faced with disappointment, most students remain undeterred and instead become more competitive, eager to seize any opportunity to improve their scores. This competitive drive was evident as participants often expressed disappointment when they scored lower than their peers or when they lost in a game. The Book Widgets application, with its interactive scoreboards, played a significant role in **motivating** students and encouraging them to strive for success through the social pressure it created. The disappointment experienced by students is closely linked to the competitive element, as Participant 5 mentioned, *"It looks like a competition and in a competition, I really want to win, so then I'll actually try my best."* The resemblance to a **competition** drives the students to give their best effort. Additionally, the application's **cooperation** element, as described by the students, allowed them to collaborate and **engage** in tasks with friends, making the learning experience enjoyable and **motivating** through the element of **cooperation**. Furthermore, providing students with summary results stoked their intrinsic **motivation** to perform better, particularly when they saw that they had not achieved a perfect score of 5/5. In the social dimension, elements of **reputation** and **social pressure**, as revealed in the response of Participant 8, were also found to influence student **motivation**, contributing to the dynamic interplay of **competition** and **cooperation** within the learning environment.

Overall, regarding the social dimension, elements such as competition, cooperation, reputation, and social pressure are interconnected. From the teacher's perception, these elements were interpreted as **motivating** and **engaging** for students. Respondent 12 expressed, *"Students are competitive and want to show and prove that they are able to do the work. Healthy competitive between students is beneficial in student's growth and progress."* Within the social dimension, extrinsic motivation is triggered when students **engage** in **competition** to attain higher objectives, as indicated by Toda, Oliveira et al. (2019). Conversely, intrinsic motivation is fostered when students collaborate to achieve specific goals, as expounded by Shi et al. (2014).

Personal Dimension

From the perception of both students and teachers, the element of **novelty** in the Book Widgets application is crucial. Students find **motivation** in the discovery of new features, changes, updates, or surprises. As Participant 7 mentioned, *"Well, it makes it more fun and, uh, it makes like, it makes me more motivated."* Participant 8 also emphasised that these new elements encourage them to **engage** in both playing and studying. This aligns with the idea that users are more likely to be **engaged** when presented with fresh content, as suggested by Hanus and Fox (2015). For teachers, the introduction of

new design features is equally important, since it increases student **motivation** and willingness to use the application for learning, as Respondent 10 mentioned, *"The design features allow learners to be more engaged with the application which in turn increases their motivation and willingness to learn using the Book Widgets application."*

Furthermore, **sensory** elements, such as *animations, colours, and background sounds* were found to be effective in stimulating students' **intrinsic** and **extrinsic motivation**. Participant 6 mentioned how *animations* make learning fun and enjoyable, while Participant 8 found *colours* to be attention-grabbing and beautiful. This sensory **engagement** relates to the element of **sensation**, which stimulates senses for intrinsic motivation, as discussed by Toda, Oliveira et al. (2019). However, from the teacher's perspective, Respondent 11 noted that these sensory elements might be more effective for primary or elementary school learners and can, to some extent, keep high school learners focused during sessions.

Renovation, which motivates learners on an intrinsic level to try again when they fail, was evident in student responses. Participant 9 indicated a *"willingness to retry and study further"* if they did not perform well, emphasising how Book Widgets **motivates** them to learn more. This aligns with the idea that the application encourages intrinsic motivation for learning. From a teacher's perspective, Respondent 11 saw this as healthy competition and an opportunity for learners to learn from their mistakes, promoting learning retention.

The use of *quizzes* and challenges within the Book Widgets application as cognitive tasks was seen as effective in **motivating** and **engaging** students to learn. Participants highlighted the engaging nature of quizzes, with one student (Participant 1) expressing that *"quizzes felt more like a game"*, motivating them to improve over time. Participant 4 also noted that quizzes excited them to complete tasks quicker. Teachers, like Respondent 9, observed that students enjoyed competing against each other in these **engaging** quizzes. In summary, both students and teachers recognise and understand the **motivating** impact of novelty, sensory elements, renovation, and quizzes within the Book Widgets application. This acknowledgment positions it as a valuable tool for enhancing the overall learning experience.

Fictional Dimension

From a teacher's perspective, the utilisation of the Book Widgets application highlighted the significant role of audiobooks as an effective storytelling tool. According to Respondent 9, students who were struggling to read benefited greatly from the audio-based game story, comprehending concepts independently and feeling **motivated** to participate and learn more. Participant 2 supported this view, emphasising how audiobooks served as helpful guides on Book Widgets, aiding them in understanding tasks and material. The incorporation of audio, an essential element in storytelling, encouraged students to unleash their imaginations, fostering **intrinsic motivation**. This enjoyable dimension was emphasised by Participant 9, who described Book Widgets as both *"fun and encouraging"*, transforming the learning experience into an immersive game rather than traditional schoolwork. From the teacher's standpoint, audiobooks proved especially valuable for students facing reading challenges, enabling even weak readers to grasp concepts independently, ultimately enhancing their **engagement** and enthusiasm for learning.

Performance Dimension

From the perspective of both the students and teachers, the acknowledgment element within the Book Widgets application played a significant role in **motivating** and **engaging** learners. This acknowledgment element included various components, such as badges, level advancement, progress bars, and points, which were often interconnected with other motivational factors. These components serve as extrinsic feedback mechanisms, commending specific actions of the player (Toda, Klock et al., 2019). Participant 10 described the feeling of happiness and reward associated with earning points, suggesting that these extrinsic rewards provide a sense of accomplishment and recognition. Another student (Participant 5) shared how earning points *"excited"* them and *"motivated"* them to continue

learning and playing. Teachers observed that these extrinsic motivators, such as points, were associated with the sensation element, as they attracted students' attention and encouraged them to **engage** further, as mentioned by Respondent 5. Additionally, the progression element within the performance dimension was highlighted by students. Participant 3 found **motivation** in the progress bars, as it allowed them to track their improvement over time. Participant 4 expressed how this progression **motivated** them to learn and improve. Progression within the application enables students to understand their position within the learning environment and provides an extrinsic sense of their progress which is in alignment with the findings of Toda, Oliveira et al. (2019). Teachers also acknowledged the value of progress bars, since they offered immediate feedback to students and helped them visualise their performance and areas for improvement, as mentioned by Respondent 6.

In the context of the performance dimension, extrinsic motivation played a crucial role, since it was associated with environmental responses that provided feedback to learners through assessments. Extrinsic motivation stems from external rewards, as defined by Cherry (2022). It was evident that students who participated in the study felt **motivated** by receiving rewards, which in turn stimulated their extrinsic motivation. The use of extrinsic motivation in the classroom, such as rewarding students for their accomplishments with points and recognition, was effective in **motivating** learners, as observed by both students and teachers. The acknowledgment element, with its various components, served as a powerful tool for enhancing **motivation** and **engagement** within the Book Widgets application.

DISCUSSION

Table 1 outlines the gamification elements present in the Book Widgets application across various dimensions within the gamification taxonomy framework (Toda, Oliveira et al., 2019), encompassing the perceptions from both teachers and students.

Table 1. Summary of findings

Dimension	Elements	Teachers Perception	Students Perception
Ecological	Chance	Bonus points serve as a motivating factor, enhancing student engagement.	Joy and motivation from unexpected bonus points.
	Time Pressure	Time pressure instils time management skills, beneficial for students.	Motivated to complete tasks on time.
Social	Competition	Healthy competition is beneficial for student growth and progress.	Competitive drive motivates students to improve scores.
	Cooperation	Cooperation element encourages collaborative learning experiences.	Collaboration in tasks with friends makes learning enjoyable.
	Reputation/Social Pressure	Reputation and social pressure contribute to dynamic competition and cooperation.	Influence of reputation and social pressure on student motivation.
Personal	Novelty	Introduction of new design features increases motivation and willingness to learn.	Discovery of new features makes learning fun and motivating.

Dimension	Elements	Teachers Perception	Students Perception
	Sensation	Sensory elements are effective for engaging primary school learners.	Animations and colours stimulate intrinsic and extrinsic motivation.
	Renovation	Seen as healthy competition and an opportunity for learning retention.	Willingness to retry and learn from mistakes.
	Quizzes/ Challenges	Engaging quizzes observed to be enjoyable and competitive for students.	Quizzes feel like a game, motivating improvement.
Fictional	Audiobooks	Audiobooks beneficial for struggling readers, transforming learning into an immersive experience.	Audiobooks serve as effective storytelling tools, aiding in comprehension and motivation.
Performance	Acknowledgment	Acknowledgment elements (points, progression) attract attention and encourage further engagement.	Extrinsic rewards (badges, points) provide a sense of accomplishment and motivation.
	Progression	Progress bars offer immediate feedback, helping students visualise their performance and areas for improvement.	Progress bars motivate students to track improvement.

Based on the comparison of teacher and student perceptions of the Book Widgets application, several similarities and differences are evident. Both students and teachers recognise the positive influence of extrinsic motivators, such as points and badges, in enhancing engagement. The competitive element is perceived similarly, fostering a desire to excel and promote healthy competition. Time pressure is acknowledged by both teachers and students, with students finding motivation in deadlines and teachers valuing it as a tool for imparting time management skills. Novelty, sensation, and progression elements are deemed crucial for sustaining interest, with audiobooks, in particular, aiding struggling readers. However, differences arise in emotional experiences, since students express joy and determination tied to bonus points, and in the perceived impact of social pressure and reputation on motivation. The effectiveness of the sensation element for different age groups is acknowledged, and teachers perceived time pressure and progress bars not just as motivators, but also as valuable educational tools. Recognising these similarities and differences enhances the understanding of complex motivation and engagement dynamics within the learning environment.

CONCLUSION

In this study, the researchers explored how teachers and students perceived Book Widgets to enhance motivation and engagement in the educational setting. The focus was on analysing the gamification elements present in Book Widgets, including points, badges, time frames, and progress bars, with the aim of enhancing motivation and engagement. As per the gamification taxonomy by Toda, Oliveira et al. (2019), all dimensions were to some extent, apparent in Book Widgets. Participants' responses indicated a substantial contribution of these dimensions to enhancing student motivation and engagement. For instance, both teachers and students acknowledge the positive impact of extrinsic

motivators, such as points and badges on engagement. Additionally, time pressure, recognised by both teachers and students, serves as motivation, with students finding it a compelling factor. The results unequivocally demonstrate that teachers and students perceive incorporating interactive gamification elements through Book Widgets as a highly effective strategy for elevating motivation and engagement within the educational setting.

The observed increase in motivation and engagement underscores the transformative impact of Book Widgets on the overall educational experience. Despite acknowledging certain challenges, the overwhelmingly positive feedback emphasises the substantial potential of Book Widgets as a valuable and impactful educational tool.

The current research contributes significantly to the ongoing discourse on innovative teaching methodologies and the motivation and engagement of learners. The insights gleaned from this study can serve as a guide for teachers and institutions looking to integrate Book Widgets seamlessly into diverse educational settings. By addressing the identified challenges and leveraging the positive aspects highlighted in the study, teachers can harness the full potential of gamification elements to foster continuous improvement in teaching methodologies and ultimately enhance learning outcomes.

As the educational landscape continues to evolve, this research positions Book Widgets as a promising avenue for promoting motivation and engagement, ultimately shaping a more dynamic and effective learning environment for both teachers and students. The study's implications extend beyond the confines of this research, offering a roadmap for the continued development and refinement of educational technologies that prioritise active engagement and motivation in the pursuit of academic excellence.

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